ΒΙΟΓΡΑΦΙΚΟ

Στέλιος Κώτσιος

ΑΘΗΝΑ-2025

Section A: Βασικές Πληροφορίες στα Ελληνικά

Section B: Papers
Section C: Basic Information in English
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ΒΑΣΙΚΕΣ

ΠΛΗΡΟΦΟΡΙΕΣ

Α. 1. ΟΙΚΟΓΕΝΕΙΑ

Επίθετο: **ΚΩΤΣΙΟΣ**

Όνομα: **ΣΤΥΛΙΑΝΟΣ**

Όνομα Πατρός: **ΑΛΦΟΝΣΟΣ ΚΩΤΣΙΟΣ (1924-2007)**

Όνομα Μητρός: **ΑΝΑΣΤΑΣΙΑ ΚΩΤΣΙΟΥ ΤΟ ΓΕΝΟΣ ΨΥΛΛΑ (1933-2024)**

Όνομα Συζύγου: **ΚΩΝΣΤΑΝΤΙΝΑ ΜΑΡΙΝΗ – ΦΑΡΜΑΚΟΠΟΙΟΣ**

Όνομα Αδελφού: **ΓΕΩΡΓΙΟΣ ΚΩΤΣΙΟΣ - ΜΟΥΣΙΚΟΣ**

Τέκνα

ΑΝΑΣΤΑΣΙΑ ΚΩΤΣΙΟΥ -*ΦΙΛΟΛΟΓΟΣ, ΗΘΟΠΟΙΟΣ*

ΧΑΡΙΚΛΕΙΑ ΚΩΤΣΙΟΥ – *FINE ARTS*

ΑΛΦΟΝΣΟΣ-ΛΕΩΝΙΔΑΣ ΚΩΤΣΙΟΣ- *ΠΛΗΡΟΦΟΡΙΚΟΣ, ΨΗΦΙΑΚΑ ΣΥΣΤΗΜΑΤΑ*

Α. 2. ΠΡΟΣΩΠΙΚΕΣ ΠΛΗΡΟΦΟΡΙΕΣ

Ημερομηνία γέννησης:	**20 Απριλίου 1960**
Τόπος γέννησης:	**Αθήνα**
Εθνικότητα:	**Ελληνική**
ΑΑΤ:	**ΑΜ046379**
ΑΜΚΑ	**20046004139**
ΑΦΜ:	**034865034**
Προσωπικός αριθμός:	**60Ζ034865034**
Οικογενειακή Κατάσταση:	**ΝΥΜΦΕΥΜΕΝΟΣ ΑΠΟ ΤΟ 1998 ΜΕ ΤΗΝ ΚΩΝΣΤΑΝΤΙΝΑ ΜΑΡΙΝΗ, ΦΑΡΜΑΚΟΠΟΙΟ, ΠΑΤΕΡΑΣ 3 ΠΑΙΔΙΩΝ.**
Στρατιωτική Θητεία:	**ΠΟΛΕΜΙΚΗ ΑΕΡΟΠΟΡΙΑ, (1989-91)**
Βασικές Σπουδές:	**ΜΑΘΗΜΑΤΙΚΟΣ**
Ξένες Γλώσσες:	**ΑΓΓΛΙΚΑ (άριστα), ΓΕΡΜΑΝΙΚΑ (μέτρια)**

Α. 3. ΣΠΟΥΔΕΣ

ΙΔΡΥΜΑ	*ΧΡΟΝΟΛΟΓΙΑ*	*ΔΙΑΤΡΙΒΗ*	*ΣΧΟΛΙΑ*
3ο Δημοτικό Σχολείο Βύρωνος	1966-1972		Σημαιοφόρος
Γυμνάσιο(Λύκειο) Αρρένων Βύρωνος	1972-1978		Εισαγωγή με εξετάσεις. Έπαινοι ΑΙΕΝ ΑΡΙΣΤΕΥΕΙΝ
Μαθηματικό Τμήμα, Εθνικό Καποδιστριακό Πανεπιστήμιο Αθηνών	1/10/1978 – 19/4/1983		Βαθμός: «Λίαν Καλως» (7.2) Υποτροφίες: ΙΚΥ, Ίδρυμα Σταθάτου.
Μεταπτυχιακό Πληροφορικής και Επιχειρησιακής Έρευνας - Μαθηματικό Τμήμα-ΕΚΠΑ	15/9/1983 – 19/9/1986	Ανεύρεση της Ελαχίστου Ιδιοτιμής ενός Πίνακα με την Μέθοδο Conjugate-Gradient-PSD	Βαθμός: «Καλώς»(6) Επιβλέπων Μεταπτυχιακής Διατριβής: Νίκος Μισυρλής
Διδακτορικό Δίπλωμα-Τμήμα Πληροφορικής-ΕΚΠΑ	1987-9/6/1993	"Μη Γραμμικά Συστήματα: Πρόβλημα Συναρμογής, BIBO Ευστάθεια και Προσαρμοστικός Έλεγχος"	Βαθμός: Άριστα Επιβλέπων Διδακτορικής Διατριβής: Καλουπτσίδης Νίκος.

Υποτροφίες

Κατά την διάρκεια των σπουδών μου ήμουν υπότροφος τόσο του **ΙΚΥ** (τιμητικό δίπλωμα) (1978-1982), όσο και του ιδρύματος **Σταθάτου** (χρηματικό ποσό) (1976-1982).

Βραβεία

- ✓ Βραβείο : « Αναγνώρισης της Εξαιρετικής Προσφοράς στο Πανεπιστήμιο και την Κοινωνία»
  (2023-24) https://hub.uoa.gr/aponomi-ton-etision-vraveion-kathigiton-kai-kathigitrion-tou-panepistimiou-athinon/

- ✓ Τιμητικό Δίπλωμα : « Για το Διδακτικό και Επιστημονικό του Έργο στην ΣΤΕΑΜΧ»
  26/1/2024

Α.4. ΤΡΕΧΟΥΣΑ ΘΕΣΗ ΕΡΓΑΣΙΑΣ

ΚΑΘΗΓΗΤΗΣ

ΕΘΝΙΚΟ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ

ΣΧΟΛΗ ΟΙΚΟΝΟΜΙΚΩΝ ΚΑΙ ΠΟΛΙΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ

ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ

ΤΟΜΕΑΣ ΜΑΘΗΜΑΤΙΚΩΝ-ΠΛΗΡΟΦΟΡΙΚΗΣ-ΣΤΑΤΙΣΤΙΚΗΣ-ΟΙΚΟΝΟΜΕΤΡΙΑΣ

ΦΕΚ Πρώτου Διορισμού (Λέκτορας**): 222 – 31/12/1998.**
ΦΕΚ Δεύτερου Διορισμού (Επίκουρος Καθηγητής**): 153 – 2/07/2003.**
ΦΕΚ Μονιμοποίησης (Μόνιμος Επίκουρος Καθηγητής**): 835/22-10-07**

ΦΕΚ Τρίτου Διορισμού (Αναπληρωτής Καθηγητής **) 105/17-02-2010**

ΦΕΚ Ακύρωσης Τρίτου Διορισμού (Μόνιμος Επίκουρος Καθηγητής**) 107/23-03-2011**

ΦΕΚ Εκ Νέου Διορισμού Αναδρομικά (Αναπληρωτής Καθηγητής) **333/26/3/2012**

ΦΕΚ Τελευταίου Διορισμού (Καθηγητής Πρώτης Βαθμίδος) **67/2-02-2016**

Α. 5. ΕΠΙΚΟΙΝΩΝΙΑ

Διεύθυνση Κατοικίας:

ΓΡΙΒΑ 17-19

ΧΑΛΑΝΔΡΙ 152 33,

ΑΘΗΝΑ

Διεύθυνση Εργασίας:

ΕΘΝΙΚΟ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ ,

ΣΧΟΛΗ ΟΙΚΟΝΟΜΙΚΩΝ και ΠΟΛΙΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ

ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ

ΣΟΦΟΚΛΕΟΥΣ 1, ΑΘΗΝΑ 105 59

Τηλέφωνα

Εργασίας**: 210 3689874** Οικίας**: 210 6894328, 210 6825774**

Κινητό**: 6932690203**

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Κοινωνικα Δίκτυα

Ιστότοπος:

https://www.econ.uoa.gr/staff/%ce%ba%cf%8e%cf%84%cf%83%ce%b9%ce%bf%cf%82-%cf%83%cf%84%ce%ad%ce%bb%ce%b9%ce%bf%cf%82/

Facebook: https://www.facebook.com/skotsios/

Linked in: https://www.linkedin.com/in/stelios-kotsios-034007201/

ΠΡΟΫΠΗΡΕΣΙΑ

Β.1 ΠΡΟΫΠΗΡΕΣΙΑ ΑΝΑ ΘΕΣΗ ΕΡΓΑΣΙΑΣ (ΕΡΓΟΔΟΤΗ)

- ✓ **Μεταλυκειακό Προπαρασκευαστικό Κέντρο, Αγίου Δημητρίου**. 1986-88, Καθηγητής Μέσης Παιδείας.
- ✓ **Στρατιωτική Σχολή Ευελπίδων** , 1983-84,1985-86,1988-89,1990-94, Ωρομίσθιος καθηγητής
- ✓ **ΕΚΠΑ–ΤμήμαΠληροφορικής**, 1989-1994, Βοηθός Διδασκαλίας
- ✓ **ΠΕΚ Τρίπολης**, 1993-94, Επιμορφωτής Καθηγητών Μέσης Παιδείας
- ✓ **University College Dublin**, Engineering Department, Ireland, 1994-1997, Μεταδιδακτορικής Ερευνητής, Human, Capital and Mobility, Lecturer.
- ✓ **ΕΜΠ – ΣΕΜΦΕ – Μαθηματικό Τμήμα**., 1996-1997, Μεταδιδακτορικός Ερευνητής, TMR
- ✓ **MIS** , Ιδιωτικό προπαρασκευαστικό κέντρο για σπουδές σε αγγλικά πανεπιστήμια, 1996-98, Καθηγητής Μαθηματικών
- ✓ **Πανεπιστήμιο Θεσσαλίας–Τμήμα Πολιτικών Μηχανικών,** 1997-98, Επίκουρος Καθηγητής του Π.Δ. 80/407.
- ✓ **ΤΕΙ Αθηνών–Τμήμα Ναυπηγών,1997–98**, Επιστημονικός Συνεργάτης Μαθηματικών.
- ✓ **Πανεπιστήμιο Πελοποννήσου–Τμήμα Πληροφορικής**, 2002-2003, Αναπληρωτής Καθηγητής Μαθηματικών του Π.Δ. 80/407.

- ✓ **ΣΤΕΑΜΧ** (Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού), 1999-Σήμερα, Καθηγητής Μαθηματικών για Μηχανικούς.
- ✓ **ΕΑΠ** (Ελληνικό Ανοικτό Πανεπιστήμιο), 2002-Σήμερα, Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών.

- ✓ **ΕΚΠΑ–ΠΣΕ**(Πρόγραμμα Σπουδών Επιλογής), 1999-2002) Τμήμα Διαχείρισης Ανθρωπύνου Δυναμικού, Διδάσκων Ποσοτικών Μεθόδων.

- ✓ **ΕΚΠΑ–elearning**, 2004-2006, Υπεύθυνος του προγράμματος e-learning Πληροφορικής.
- ✓ **ΕΚΠΑ–Τμήμα Οικονομικών Επιστημών**, 1998-Σήμερα, Μέλος ΔΕΠ

Β.2 ΠΡΟΫΠΗΡΕΣΙΑ ΑΝΑ ΕΤΟΣ

ΧΡΟΝΟΛΟΓΙΚΟΣ ΠΙΝΑΚΑΣ ΠΡΟΫΠΗΡΕΣΙΑΣ

Έτος	**Εργοδότες**	**Είδος Θέσεων**
1983-84	Στρατιωτική Σχολή Ευελπίδων	Ωρομίσθιος Καθηγητής Ανωτέρων Μαθηματικών
1985-86	Στρατιωτική Σχολή Ευελπίδων	Ωρομίσθιος Καθηγητής Ανωτέρων Μαθηματικών
1986-87	Μεταλυκειακό Προπαρασκευαστικό Κέντρο, Αγίου Δημητρίου.	Καθηγητής Μέσης Παιδείας
1987-88	Μεταλυκειακό Προπαρασκευαστικό Κέντρο, Αγίου Δημητρίου.	Καθηγητής Μέσης Παιδείας
1988-89	Στρατιωτική Σχολή Ευελπίδων	Ωρομίσθιος Καθηγητής Ανωτέρων Μαθηματικών
1989-90	Πανεπιστήμιον Αθηνών – Τμήμα Πληροφορικής.	Βοηθός Διδασκαλίας Θεωρίας Ελέγχου.
1990-91	1.Στρατιωτική Σχολή Ευελπίδων	Ωρομίσθιος Καθηγητής Ανωτέρων Μαθηματικών
	2.Πανεπιστήμιον Αθηνών – Τμήμα Πληροφορικής.	Βοηθός Διδασκαλίας Θεωρίας Ελέγχου.
1991-92	1.Στρατιωτική Σχολή Ευελπίδων	Ωρομίσθιος Καθηγητής Ανωτέρων Μαθηματικών
	2.Πανεπιστήμιον Αθηνών – Τμήμα Πληροφορικής.	Βοηθός Διδασκαλίας Θεωρίας Ελέγχου.
1992-93	1.Στρατιωτική Σχολή Ευελπίδων	Ωρομίσθιος Καθηγητής Ανωτέρων Μαθηματικών
	2.Πανεπιστήμιον Αθηνών – Τμήμα Πληροφορικής.	Βοηθός Διδασκαλίας Θεωρίας Ελέγχου.
1993-94	1.Στρατιωτική Σχολή Ευελπίδων	Ωρομίσθιος Καθηγητής Ανωτέρων Μαθηματικών
	2.Πανεπιστήμιον Αθηνών – Τμήμα Πληροφορικής.	Βοηθός Διδασκαλίας Θεωρίας Ελέγχου.
	3. ΠΕΚ – Τρίπολης.	Επιμορφωτής
1994-95	University College Dublin, Engineering Department, Ireland	Μεταδιδακτορικός Ερευνητής, Human Capital and Mobility
1995-96	University College Dublin, Engineering Department, Ireland.	Μεταδιδακτορικός Ερευνητής, Human Capital and Mobility

1996-97	1.Εθνικό Μετσόβιο Πολυτεχνείο – Μαθηματικό Τμήμα.	Μεταδιδακτορικός Ερευνητής, TMR.
	2. MIS	Ωρομίσθιος Καθηγητής
1997-98	1.Πανεπιστήμιο Θεσσαλίας – Τμήμα Πολιτικών Μηχανικών.	Επίκουρος Καθηγητής του Π.Δ. 80/407.
	2.ΤΕΙ Αθηνών – Τμήμα Ναυπηγών.	Επιστημονικός Συνεργάτης Μαθηματικών.
	3. MIS	Ωρομίσθιος Καθηγητής
1998-99	ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής.
1999-00	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής
	2.ΕΚΠΑ– Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.
	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ)	Καθηγητής Μαθηματικών για Μηχανικούς.
2000-01	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής
	2.ΕΚΠΑ– Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.
	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ)	Καθηγητής Μαθηματικών για Μηχανικούς.
2001-02	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής
	2.ΕΚΠΑ– Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.
	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς.
	4.ΕΚΠΑΟικονομικό Πανεπιστήμιο – Διατμηματικό Διδακτορικό Πρόγραμμα Σπουδών.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2002-03	1. ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής
	2. ΕΚΠΑ– Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.
	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς.
	4.Πανεπιστήμιο Πελοποννήσου – Τμήμα Πληροφορικής.	Αναπληρωτής Καθηγητής Μαθηματικών του Π.Δ. 80/407.
	5.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών.
2003-04	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Επίκουρος Καθηγητής, Τομέα Μαθηματικών Πληροφορικής.
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς.
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	4.ΕΚΠΑ– Πρόγραμμα e-learning.	Υπεύθυνος του προγράμματος e-learning Πληροφορικής.
	5.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2004-05	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Επίκουρος Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.ΕΚΠΑ– Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.

	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	4.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	5. ΕΚΠΑ– Πρόγραμμα e-learning.	Υπεύθυνος του προγράμματος e-learning Πληροφορικής.
	6.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2005-06	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Επίκουρος Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.ΕΚΠΑ– Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.
	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	4.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	5. ΕΚΠΑ– Πρόγραμμα e-learning.	Υπεύθυνος του προγράμματος e-learning Πληροφορικής.
	6.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2006-07	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Επίκουρος Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2007-08	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Μόνιμος Επίκουρος Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
2008-09	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Μόνιμος Επίκουρος Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2009-10	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Μόνιμος Επίκουρος Καθηγητής – Αναπληρωτής ΚΑθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
2010-11	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Αναπληρωτής Καθηγητής, Τομέα Μαθηματικών Πληροφορικής

	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2011-12	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Αναπληρωτής Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	4.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2012-13	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Αναπληρωτής Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	4.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2013-14	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Αναπληρωτής Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2014-15	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Αναπληρωτής Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2015-16	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Πληροφορικής.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Μαθηματικών
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού

	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΔΟΜΟ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2016-17	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΔΟΜΟ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2017-18	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού (ΜΧΑΚ-Business Analytics)
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΔΟΜΟ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2018-19	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΑΝΑΛΥΣΗΣ ΔΕΔΟΜΕΝΩΝ ΚΑΙ ΔΙΟΙΚΗΣΗΣ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2019-20	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΑΝΑΛΥΣΗΣ ΔΕΔΟΜΕΝΩΝ ΚΑΙ ΔΙΟΙΚΗΣΗΣ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού

	8.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΣΤΡΑΤΗΓΙΚΟΥ MANAGEMENT	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	9.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2020-21	1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2021-22	*1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.*	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2022-23	*1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.*	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2023-24	*1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.*	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων

	4.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2024-25	*1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.*	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2025-26	*1.ΕΚΠΑ– Τμήμα Οικονομικών Επιστημών.*	ΔΕΠ–Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς
	3.Ελληνικό Ανοικτό Πανεπιστήμιο – Τμήμα Διοίκησης Επιχειρήσεων.	Σύμβουλος Εκπαίδευσης (ΣΕΠ), Ποσοτικών Μεθόδων
	4.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα ΣΤΡΑΤΗΓΙΚΗΣ ΔΙΟΙΚΗΣΗΣ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού

Β.3 ΣΤΑΤΙΣΤΙΚΑ ΠΡΟΫΠΗΡΕΣΙΑΣ

ΣΥΝΟΠΤΙΚΟΣ ΠΙΝΑΚΑΣ ΠΡΟΠΤΥΧΙΑΚΗΣ ΠΡΟΫΠΗΡΕΣΙΑΣ ΣΕ ΑΕΙ

ΘΕΣΗ	ΕΤΗ	ΣΥΜΨΗΦΙΣΜΟΣ ΕΤΩΝ
Στρατιωτική Σχολή Ευελπίδων(ΣΣΕ)	**7**	**7**
University College Dublin	**3**	**3**
Εθνικό Μετσόβιο Πολυτεχνείο	**1**	**1**
Πανεπιστήμιο Θεσσαλίας	**1**	**1**
ΤΕΙ Αθηνών	**1**	
Πανεπιστήμιο Αθηνών	**28**	**28**
Πρόγραμμα Σπουδών Επιλογής	**5**	
ΣΤΕΑΜΧ	**26**	
Πανεπιστήμιο Πελοποννήσου	**1**	
Ελληνικό Ανοικτό Πανεπιστήμιο	**24**	
ΣΥΝΟΛΟ		40

ΣΥΝΟΠΤΙΚΟΣ ΠΙΝΑΚΑΣ ΜΕΤΑΠΤΥΧΙΑΚΗΣ ΠΡΟΫΠΗΡΕΣΙΑΣ ΣΕ ΑΕΙ

ΘΕΣΗ	ΕΤΗ	ΣΥΜΨΗΦΙΣΜΟΣ ΕΤΩΝ
Πανεπιστήμιο Αθηνών. Διδακτορικό Μεταπτυχιακό Πρόγραμμα Οικονομικού Τμήματος	**21**	**21**
ΕΚΠΑ– Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	**10**	
Πανεπιστήμιο Αθηνών- Άλλα Μεταπτυχιακά	**10**	
ΣΥΝΟΛΟ		**21**

ΜΕΡΟΣ Γ

ΔΙΔΑΚΤΙΚΗ ΕΜΠΕΙΡΙΑ

Γ.1. ΜΑΘΗΜΑΤΑ ΠΟΥ ΕΧΩ ΔΙΔΑΞΕΙ

ΤΙΤΛΟΣ ΜΑΘΗΜΑΤΟΣ	ΣΧΟΛΗ	ΠΕΡΙΕΧΟΜΕΝΟ
ΠΡΟΠΤΥΧΙΑΚΑ		
ΑΝΩΤΕΡΑ ΜΑΘΗΜΑΤΙΚΆ Ι	ΣΣΕ	Ανάλυση συναρτήσεων μίας και πολλών μεταβλητών
ΑΝΩΤΕΡΑ ΜΑΘΗΜΑΤΙΚΆ ΙΙ	ΣΣΕ	Διαφορικές εξισώσεις
ΓΕΩΜΕΤΡΙΑ	ΣΣΕ	Στοιχεία Αναλυτικής και Διαφορικής Γεωμετρίας
ΜΑΘΗΜΑΤΙΚΆ	ΤΕΙ ΑΘΗΝΩΝ	Ανάλυση συναρτήσεων μίας και πολλών μεταβλητών
ΜΑΘΗΜΑΤΙΚΆ ΙΙ	ΠΑΝ ΘΕΣΣΑΛΙΑΣ	Διαφορικές εξισώσεις σε πολιτικούς μηχανικούς
ΑΝΑΛΥΣΗ ΙΙ	ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΛΟΠΟΝΝΗΣΟΥ	Ανάλυση συναρτήσεων πολλών μεταβλητών σε φοιτητές Πληροφορικής
ΓΡΑΜΜΙΚΗ ΑΛΓΕΒΡΑ	ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΛΟΠΟΝΝΗΣΟΥ	Όλη η κλασική ύλη Γραμμικής Άλγεβρας σε φοιτητές Πληροφορικής
ΜΑΘΗΜΑΤΙΚΆ Ι	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΕΚΠΑ	Ανάλυση Συναρτήσεων Μίας Μεταβλητής
ΜΑΘΗΜΑΤΙΚΆ ΙΙ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΕΚΠΑ	Ανάλυση Συναρτήσεων Πολλών μεταβλητών και Στοιχεία Γραμμικής Άλγεβρας
ΜΑΘΗΜΑΤΙΚΆ ΙΙΙ (ΔΥΝΑΜΙΚΑ ΜΑΘΗΜΑΤΙΚΆ)	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΕΚΠΑ	Διαφορικές Εξισώσεις - Εξισώσεις Διαφορών
ΓΡΑΜΜΙΚΑ ΜΑΘΗΜΑΤΙΚΆ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΕΚΠΑ	Όλη η κλασική ύλη Γραμμικής Άλγεβρας που χρησιμοποιείται στα οικονομικά
ΔΥΝΑΜΙΚΑ ΟΙΚΟΝΟΜΙΚΑ ΣΥΣΤΗΜΑΤΑ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΕΚΠΑ	Ποιοτική θεωρία Διαφορικών εξισώσεων και εξισώσεων διαφορών. Στοιχεία θεωρίας Ελέγχου. Εφαρμογές στην οικονομία.
ΠΟΣΟΤΙΚΕΣ ΜΕΘΟΔΟΙ ΣΤΗΝ ΕΠΙΧΕΙΡΗΣΙΑΚΗ ΕΡΕΥΝΑ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΕΚΠΑ	Μέθοδοι Βελτιστοποίησης
ΑΡΙΘΜΗΤΙΚΕΣ ΜΕΘΟΔΟΙ ΣΤΗΝ ΟΙΚΟΝΟΜΙΑ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΕΚΠΑ	Στοιχεία αριθμητικής ανάλυσης με την εφαρμογή τους στα οικονομικά
ΕΙΔΙΚΑ ΘΕΜΑΤΑ ΜΑΘΗΜΑΤΙΚΩΝ ΓΙΑ ΟΙΚΟΝΟΜΟΛΟΓΟΥΣ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΕΚΠΑ	Θεωρία Συνόλων – Βελτισοποίηση – Μέθοδος Kuhn-Tucker
ΑΝΩΤΕΡΑ ΜΑΘΗΜΑΤΙΚΑ ΓΙΑ ΜΗΧΑΝΙΚΟΥΣ	ΣΤΕΑΜΧ	Αριθμητικές Μέθοδοι, Μιγαδική Ανάλυση, Μετασχηματισμός Laplace.
ΜΕΤΑΠΤΥΧΙΑΚΑ		
QUANTITATIVE METHODS	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ-ΔΙΔΑΚΤΟΡΙΚΟ ΠΡΟΓΡΑΜΜΑ	Advance calculus of several variables
DYNAMICAL MATHEMATICS	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ-ΔΙΔΑΚΤΟΡΙΚΟ ΠΡΟΓΡΑΜΜΑ	Differential Equations-Phase Portraits -Optimal Control

CONTROL AND ECONOMICS	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ-ΔΙΔΑΚΤΟΡΙΚΟ ΠΡΟΓΡΑΜΜΑ	Optimal Control Theory and Economics
COMPUTATIONAL MATHEMATICS	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΜΕΤΑΠΤΥΧΙΑΚΟ ΟΙΚΟΝΟΜΙΚΗΣ ΘΕΩΡΙΑΣ	Computational Economics Methods - MATHEMATICA
ΠΟΣΟΤΙΚΕΣ ΜΕΘΟΔΟΙ ΣΤΗΝ ΔΙΟΙΚΗΣΗ ΚΑΙ ΤΗΝ ΕΠΙΧΕΙΡΗΣΙΑΚΗ ΕΡΕΥΝΑ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ-ΜΕΤΑΠΤΥΧΙΑΚΟ ΕΦΑΡΜΟΣΜΕΝΗΣ ΟΙΚΟΝΟΜΙΑΣ	Μη Γραμμικός και Δυναμικός Προγραμματισμός
ΠΟΣΟΤΙΚΕΣ ΜΕΘΟΔΟΙ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ-ΜΕΤΑΠΤΥΧΙΑΚΟ ΔΔΟΜΟ, ΚΑΤΕΥΘΥΝΣΗ ΛΟΓΙΣΤΙΚΗΣ	Λογισμός, Ασφαλιστικά Μαθηματικά.
ΣΤΟΧΑΣΤΙΚΑ ΜΑΘΗΜΑΤΙΚΑ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ-ΜΕΤΑΠΤΥΧΙΑΚΟ ΔΔΟΜΟ, ΚΑΤΕΥΘΥΝΣΗ ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Θεωρία Πιθανοτήτων, Τυχαίοι Περίπατοι, Κίνηση Brown.
ΜΑΘΗΜΑΤΙΚΑ ΤΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ – ΜΕΤΑΠΤΥΧΙΑΚΟ ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Προχωρημένη Γραμμική Άλγεβρα-Διαφορικές Εξισώσεις-Διαφορικές εξισώσεις με Μερικές Παραγώγους-Εξισώσεις Διαφορών
ΣΤΟΧΑΣΤΙΚΑ ΜΑΘΗΜΑΤΙΚΑ Ι	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ – ΜΕΤΑΠΤΥΧΙΑΚΟ ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Κίνηση Brown-Stochastic Calculus-Black Sholes
ΣΤΟΧΑΣΤΙΚΑ ΜΑΘΗΜΑΤΙΚΑ ΙΙ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ – ΜΕΤΑΠΤΥΧΙΑΚΟ ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Ανέλιξη Poisson-Ανελίξεις Markov-Ασφαλιστικά Μαθηματικά
ΘΕΩΡΙΑ ΑΠΟΦΑΣΕΩΝ ΚΑΙ ΠΑΙΓΝΙΩΝ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ – ΜΕΤΑΠΤΥΧΙΑΚΟ ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Δυναμικός Προγραμματισμός-Παίγνια Μηδενικού Αθροίσματος-Παίγνια Μη Μηδενικού Αθροίσματος.
ΠΟΣΟΤΙΚΕΣ ΜΕΘΟΔΟΙ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ – ΜΕΤΑΠΤΥΧΙΑΚΟ ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ	Βασικά Μαθηματικά για Οικονομολόγους-Περιγραφική Στατιστική
ΕΙΣΑΓΩΓΙΚΑ ΜΑΘΗΜΑΤΙΚΑ	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ – ΜΕΤΑΠΤΥΧΙΑΚΟ ΣΤΡΑΤΗΓΙΚΟΥ MANAGEMENT	Πίνακες-Ορίζουσες-Συστήματα-Παράγωγοι-Τόκοι-Επιτόκια
ΥΠΟΛΟΓΙΣΤΙΚΑ ΜΑΘΗΜΑΤΙΚΑ – MONTE CARLO	ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ – ΜΕΤΑΠΤΥΧΙΑΚΟ ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Στοιχεία αριθμητικής ανάλυσης και μεθόδων Monte Carlo με την εφαρμογή τους στα χρηματοοικονομικά και την ανάλυση κινδύνου.

Γ.2. ΕΠΙΒΛΕΨΗ ΜΕΤΑΠΤΥΧΙΑΚΩΝ ΕΡΓΑΣΙΩΝ

Έχω επιβλέψει την εκπόνηση των κάτωθι μεταπτυχιακών εργασιών (Masters):

- Δήμητρα Καΐλα "Μελέτη Ενεργειακών Πολιτικών με Τεχνικές Βέλτιστου Ελέγχου". Πανεπιστήμιο Αθηνών, Μεταπτυχιακό Εφηρμοσμένης Οικονομίας.(2002)

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- Αλέξανδος Κωνσταντόπουλος. Difference Equations and applications on loan's amortiazation. Μεταπτυχιακό Ποσοτικής Επενδυτικής, κατεύθυνση Μαθηματικής Χρηματοοικονομικής και Ανάλυσης Κινδύνου. (2020)

- Κοκολάκη Ειρήνη. «Η μέτρηση της ποιότητας των υπηρεσιών στην Ελληνική Τριτοβάθμια εκπαίδευση: Η περίπτωση της Σχολής Θετικών Επιστημών και της Ιατρικής Σχολής του Πανεπιστημίου Κρήτης» Μεταπτυχιακό Στρατηγικού Μανατζμεντ. (2021)

- Λειβαδίτης Αντώνιος, Forward start options - Monte Carlo simulations και τα υποδείγματα Black-Scholes & Heston. Μεταπτυχιακό Ποσοτικής Επενδυτικής, κατεύθυνση Μαθηματικής Χρηματοοικονομικής και Ανάλυσης Κινδύνου. (2025)

Γ.3. ΕΠΙΒΛΕΨΗ ΠΕΡΑΤΩΜΕΝΩΝ ΔΙΔΑΚΤΟΡΙΚΩΝ ΔΙΑΤΡΙΒΩΝ

Έχω επιβλέψει (κύριος επιβλέπων) την εκπόνηση των κάτωθι διδακτορικών διατριβών:

- « **Εφαρμογές της Θεωρίας Ελέγχου στην Μελέτη Οικονομικών Συστημάτων**», που εκπονήθηκε στο Τμήμα Οικονομικών Επιστημών του ΕΚΠΑ από τον κ. **Γεώργιο Αθανασίου**. Τριμελής επιτροπή: Κώτσιος, Δαλαμάγκας, Λεβεντίδης. (Ιούλιος 2008)

- «**Εφαρμογές της θεωρίας ελέγχου στο σχεδιασμό δημοσιονομικής πολιτικής»** που εκπονήθηκε στο Τμήμα Οικονομικών Επιστημών του ΕΚΠΑ από τον κ. **Ηλία Κωσταράκο**. Τριμελής επιτροπή: Κώτσιος, Χορταρέας, Λεβεντίδης. (Ιούνιος 2017)

- **«Υποδείγματα ιδιωτικού χρέους, διανομής εισοδήματος και μακροοικονομικής ευστάθειας.»** που εκπονήθηκε στο Τμήμα Οικονομικών Επιστημών του ΕΚΠΑ από την κ.**Μαρσέλλου Αιμιλία**. Τριμελής επιτροπή: Κώτσιος, Μανιάτης, Μπασιάκος. (Ιούλιος 2018)

- «***Η δυναμική συμπεριφορά του ΑΕΠ και του χρέους σε μοντέλο τύπου Samuelson-Hicks»*** εκπονήθηκε στο Τμήμα Οικονομικών Επιστημών του ΕΚΠΑ από τον κ.

Βασίλειο Σπυράκη. Τριμελής επιτροπή: Κώτσιος, Λεβεντίδης,Παπανδρέου. (Σεπτέμβριος 2024)

- **« Αλγοριθμικές μέθοδοι ελέγχου ΑΕΠ και χρέους μέσω μακροοικονομικών υποδειγμάτων »** εκπονήθηκε στο Τμήμα Οικονομικών Επιστημών του ΕΚΠΑ από τον κ. **Χαράλαμπο-Ανάστασιο Δομένικο**. Τριμελής επιτροπή: Κώτσιος, Αργείτης, Δότσης. (Οκτώβριος 2025)

- «**Computation of exchange rates using discrete stochastic systems and algorithms»** εκπονήθηκε στο Τμήμα Οικονομικών Επιστημών του ΕΚΠΑ από τον κ. **Εμμανουήλ Δρακωνάκη**. Τριμελής επιτροπή: Κώτσιος, Μπασιάκος, Δότσης. (Ιανουάριος 2026)

Έχω συμμετάσχει στις τριμελείς επιτροπές των κάτωθι διδακτορικών που εκπονήθηκαν στο Τμήμα Οικονομικών Επιστημών του ΕΚΠΑ.

- Διδακτορικό κ. Γ. Σταματάκη. Τριμελής επιτροπή: Πετράκης, Βαίτσος Κώτσιος.(2005)
- Διδακτορικό κ. Α. Πατώκου. Τριμελής επιτροπή: Βαρουφάκης, Κώτσιος, Hargreaves-Heap. (2007)
- Διδακτορικό κ. Βέρρας Αδαμαντίας. Τριμελής επιτροπή: Μυλωνάς, Κώτσιος, Θωμαδάκης (2009)
- Διδακτορικό κ. Αρ. Γκαϊντέ, (Σαρρής, Κώτσιος, Τσιριτάκης) (2018)
- Διδακτορικό κ. Δ.Πίσσα (Δαλαμάγκας, Κώτσιος, Λεβεντίδης). (2018)
- Διδακτορικό κ. Κ. Καύκα (Πετράκης, Κωστελέτου, Κώτσιος) (2019)
- Διδακτορικό κ. Τσερκέζη Ελευθέριου, (Θεοχαράκης, Βαίτσος, Κώτσιος)(2021)
- Διδακτορικό κ. Σαββοπούλου Έρσης-Ηλιάνας (Μόσχος, Μπασιάκος, Κώτσιος)(2021)
- Διδακτορικό κ. Πούλιου Νικολάου (Λεβεντίδης, Κώτσιος, Κατσίκης)(2022)

Γ.4. ΕΠΙΒΛΕΨΗ ΔΙΔΑΚΤΟΡΙΚΩΝ ΔΙΑΤΡΙΒΩΝ

Επιβλέπω τις κάτωθι διδακτορικές διατριβές:

Μορφης Αθανάσιος	Διακριτά Δυναμικά Υποδείγματα Προσφοράς Ζήτησης	ΚΩΤΣΙΟΣ ΣΤ	ΛΕΒΕΝΤΙΔΗΣ Ι.	ΚΟΥΡΑΝΤΗ ΦΡΑΓΚΩ	15/11/2022
ΠΑΠΑΔΟΠΟΥΛΟΣ ΘΕΟΔΩΡΟΣ	ΔΥΝΑΜΙΚΑ ΜΑΚΡΟΟΙΚΟΝΟΜΙΚΑ ΥΠΟΔΕΙΓΜΑΤΑ ΜΕ ΦΟΡΟΛΟΓΙΑ, ΦΟΡΟΔΙΑΦΥΓΗ-ΣΚΙΩΔΗΣ ΟΙΚΟΝΟΜΙΑ, ΔΥΝΑΜΙΚΗ ΠΡΟΣΟΜΟΙΩΣΗ ΣΥΜΠΕΡΙΦΟΡΑΣ ΦΟΡΟΛΟΓΟΥΜΕΝΩΝ	ΚΩΤΣΙΟΣ ΣΤ.	ΛΕΒΕΝΤΙΔΗΣ Ι.	ΚΑΠΛΑΝΟΓΛΟΥ Γ.	20/12/2023
ΜΩΡΑΙΤΗ ΒΑΡΒΑΡΑ	Σύγχρονες ποσοτικές μέθοδοι και μέθοδοι ηγεσίας στη μελέτη Οργανογράμματος Δημοσίων Υπηρεσιών	ΚΩΤΣΙΟΣ ΣΤ.	ΠΕΤΡΑΚΗΣ ΠΑΝ.	ΔΟΤΣΗΣ Γ.	20/12/2025

Είμαι μέλος των κάτωθι τριμελών επιτροπών:

Ονοματεπώνυμο	Τίτλος	Επιβλέπων/ουσα	Μέλη τριμελούς συμβουλευτικής επιτροπής		Ημερομηνία Εγγραφής
ΛΩΜΗΣ ΙΩΑΝΝΗΣ	International Competition and transfers of value: the case of Greece	ΜΑΝΙΑΤΗΣ ΑΘ.	ΚΩΤΣΙΟΣ ΣΤ.	ΜΑΥΡΟΥΔΕΑΣ ΣΤΑΥΡΟΣ (Καθηγητής, Πάντειο	31/10/2018

				Παν/μιο)	
ΠΑΠΑΓΓΕΛΗΣ ΛΟΥΚΑΣ	Variance Risk Premium, CPT and Asset Returns	ΔΟΤΣΗΣ Γ.	ΚΑΙΝΟΥΡΓΙΟΣ Δ.	ΚΩΤΣΙΟΣ ΣΤ.	27/03/2019
ΠΑΥΛΟΥ ΓΡΗΓΟΡΙΟΣ	Essays in applied macroeconomics: economic growth, fiscal consolidation, trade openness and the labour market	ΠΑΠΑΠΕΤΡΟΥ ΕΥΑΓΓ.	ΠΕΤΡΑΚΗΣ Π.	ΚΩΤΣΙΟΣ ΣΤ.	07/06/2006
ΣΑΡΓΕΝΤΗ ΑΛΕΚΑ	Η Ανάλυση των Οικονομικών Κύκλων και των Διακυμάνσεων στην Ελλάδα, βάσει των Δυναμικών & Οικονομετρικών Μοντέλων & Ανάλυση της Αιτιότητας Αυτών	ΛΕΒΕΝΤΙΔΗΣ Ι.	ΚΩΤΣΙΟΣ ΣΤ.	ΔΑΛΑΜΑΓΚΑΣ Β.	04/10/2017
ΤΣΟΥΤΣΟΥ ΑΛΕΞΑΝΔΡΑ	GREEK CRISIS & CREDIT RISK: PREDICTIVE ABILITY OF THE CREDIT RISK MODELS & STRESS TESTING	ΛΕΒΕΝΤΙΔΗΣ Ι.	ΚΩΤΣΙΟΣ ΣΤ.	ΔΟΤΣΗΣ Γ.	05/05/1999
ΖΩΓΡΑΦΟΣ ΕΜΜΑΝΟΥΗΛ	***Τηλεϊατρική και Τηλεχειρουργική και η περίπτωση των Δωδεκανήσων. Οικονομικά οφέλη και κόστη από την χρήση τους -Δυνατότητες και προϋποθέσεις εφαρμογής***	***ΗΡΕΙΩΤΗΣ ΝΙΚΟΛΑΟΣ (Καθηγητής ΔΕΟ ΕΚΠΑ)***	***ΒΑΣΙΛΕΙΟΥ Δ.***	***ΚΩΤΣΙΟΣ ΣΤ.***	***10/11/2022***
ΚΑΝΖΟΛΑ ΑΝΝΑ-ΜΑΡΙΑ	***Human Capital, Production Structure and Social Identity***	***ΠΕΤΡΑΚΗΣ Π.***	***ΚΩΤΣΙΟΣ ΣΤ.***	***ΠΑΠΑΠΕΤΡΟΥ ΕΥΑΓΓ.***	***10/11/2022***
ΠΑΠΑΦΡΦΑΓΚΟΣ ΑΝΑΣΤΑΣΙΟΣ	***Absolute Cost Advantage and International Trade: Theory and Empirical Evidence***	***ΤΣΟΥΛΦΙΔΗΣ ΕΛ. (Καθηγητής Πανεπιστημίου Μακεδονίας)***	***ΚΩΤΣΙΟΣ ΣΤ.***	***Rubinic Ivan (Lecturer Maastricht University)***	***29/3/2023***

Εργασία ως κριτής

- Έχω κρίνει εργασίες (reviewer) για τα ακόλουθα περιοδικά:

Applied Mathematics E- Notes (Full paper)

Asian Journal of Control (Full Paper)
Automatica (Full paper)
Economic Modeling (Full paper)
European Journal of Control (Full papers)
IEEE Transactions on Automatic Control (Full papers)
IEEE Transactions on Automatic Control (Short paper)
IMA, Journal of Information and Control (Full papers)
International Journal of Control (Full Papers)
International Journal of Mathematics (Full paper)
International Journal of Systems Science (Full Paper)
ITB Journal of Engineering Science (Full Paper)
Journal of Mathematical Systems Estimation and Control (Full paper)
Journal of Reviews on Global Economics.
Nonlinear Dynamics (Full Papers)
Numerical Algorithms.(Full Paper)
SIAM, Journal of Optimization and Control (Full paper)
Transactions of the Institute of Measurement and Control (Full Paper)
Mathematical Review Magazine (Short paper)
Journal of Applied Mathematics and Computation.
JOURNAL of MODELLING DEFENCE SYSTEMS
NUMERICAL ANALYSIS AND APPLIED MATHEMATICS

- Έχω κρίνει εργασίες (reviewer) για τα ακόλουθα συνέδρια:

52nd IEEE Conference on Decision and Control, Firenze, Italy, December, 2013
2012 ACC
2013 American Control Conference, Washington, DC, USA
24th Chinese Control and Decison Conference, Taiyuan, China 2012. (2012CCDC)
26th Chinese Control and Decison Conference, Changsha, China 2014.
30th Conference on Decision and Control
31st Chinese Control Conference, China 2012.
33rd International Conference on Current Trends in Theory and Practice of Computer Science, January 2007, Harrachov, Czech Republic. (SOFSEM07)
53rd IEEE Conference on Decision and Control, Los Angeles, California, USA, December 15-17, 2014
CDC-ECC11, to be held at Orlando, FL, USA during December 12-15, 2011
European Control Conference 2001
European Control Conference, 2005.

European Control Conference, 2007
IASTED 2012
ICCA11
IFAC 2002, 15th World Congress, Barcelona, Spain
IFAC World Congress, July 1996
IFAC WC 2017
CDC 16

Συντακτική Επιτροπή

- Από το 1987 μέχρι το 1989 συμμετείχα στην συντακτική επιτροπή και την γραμματεία του περιοδικού ΜΑΘΗΜΑΤΙΚΗ ΕΠΙΘΕΩΡΗΣΗ της Ελληνικής Μαθηματικής Εταιρείας (ΕΜΕ), εργαζόμενος για την έκδοση των αντίστοιχων τευχών, κάνοντας μεταφράσεις και επιμελούμενος άρθρα.

Ερευνητικά Προγράμματα

Έχω συμμετάσχει στα κάτωθι ερευνητικά προγράμματα:

Title	Host Organization	Budget	Source	My Role	Dates
Efficient Algorithms for Systems Identification – Research Grant	University of Athens		Funded by the Greek Ministry of Industry Research and Technology.	Simple Researcher	1989
Nonlinear Control and ΣΔ-Modulators Institutional Fellowship – Research Grant	University College Dublin	150000 Irish Pounds	Human Capital and Mobility	Main Fellow	1994-1995
Nonlinear Control – Research Grant	National Technical University	18000000 Drachmas	Return Grant-Training and Mobility of Researchers	Main Fellow	1996-1997
Systems with Discontinuity – Research Grant	University of Athens	700.000 Drachmas	Internal Grant of University of Athens	Coordinator	1999-2000
Nonlinear Control Systems in Economy – Research Grant	University of Athens	700.000 Drachmas	Internal Grant of University of Athens	Coordinator	2000-2001
Optimal Control in Economy – Research Grant	University of Athens	2000 Euro	Internal Grant of University of Athens	Coordinator	2002-2003
Nonlinear Control Techniques in Economy – Research Grant	University of Athens	2000 Euro	Internal Grant of University of Athens	Coordinator	2004-2005
Secondary School	University of Athens	6000000 Euro	ESPA-European	Senior Fellow	2008-2009

Students Mobilization-Consultant Grant	–Ministry of Education		Union		
Nonlinear Control Techniques and Dynamics of the National Debt – Research Grant	University of Athens	8000 Euro	Internal Grant of University of Athens	Coordinator	2012
Nonlinear Control Techniques and Dynamics of the National Debt – Part B Research Grant	University of Athens	5000 Euro	Internal Grant of University of Athens	Coordinator	2013
Nonlinear Control Techniques and Dynamics of the National Debt – Part C Research Grant	University of Athens	2000 Euro	Internal Grant of University of Athens	Coordinator	2014
ΑΛΓΟΡΙΘΜΟΙ ΕΛΑΧΙΣΤΩΝ ΤΕΤΡΑΓΩΝΩΝ ΚΑΙ ΠΡΟΣΑΡΜΟΣΤΙΚΟΣ ΕΛΕΓΧΟΣ ΣΤΗΝ ΜΕΛΕΤΗ ΤΗΣ ΔΥΝΑΜΙΚΗΣ ΤΟΥ ΧΡΕΟΥΣ	University of Athens	2000 Euro	Internal Grant of University of Athens	Coordinator	2015-2016
ΕΡΕΥΝΗΤΙΚΟ ΠΡΟΓΡΑΜΜΑ ΤΜΗΜΑΤΟΣ	University of Athens	236000	Internal Grant of University of Athens	Coordinator	2019-2020
ΕΡΕΥΝΗΤΙΚΟ ΠΡΟΓΡΑΜΜΑ ΤΜΗΜΑΤΟΣ	University of Athens	207000	Internal Grant of University of Athens	Coordinator	2020-2021
ΕΡΕΥΝΗΤΙΚΟ ΠΡΟΓΡΑΜΜΑ ΤΜΗΜΑΤΟΣ	University of Athens	260000	Internal Grant of University of Athens	Coordinator	2021-2022
ΕΡΕΥΝΗΤΙΚΟ ΠΡΟΓΡΑΜΜΑ ΤΜΗΜΑΤΟΣ	University of Athens	260000	Internal Grant of University of Athens	Coordinator	2022-2023
ΕΡΕΥΝΗΤΙΚΟ ΠΡΟΓΡΑΜΜΑ ΤΜΗΜΑΤΟΣ	University of Athens	290000	Internal Grant of University of Athens	Coordinator	2023-2024

Διαλέξεις

- Τον Νοέμβριο του 1994, έδωσα διάλεξη στο Birmingham University, προσκεκλημένος του καθηγ. Norton. Ο τίτλος της ήταν: "The Model Matching Problem and BIBO Criteria for a Certain Class of Nonlinear Systems".

- Τον Μάιο του 1997, έδωσα διάλεξη στο Πανεπιστήμιο Αιγαίου, προσκεκλημένος του καθηγ. Χατζησάββα. Ο τίτλος ήταν: "Συμβολή στην μελέτη των Μη Γραμμικών Διακριτών Συστημάτων Ελέγχου".

- Τον Νεόμβριο του 2023 ,έδωσα διάλεξη στο ΕΚΠΑ, Τμήμα Φιλοσοφίας, προσκεκλημένος της αν. καθηγήτριας κ. Λάζου. Ο τίτλος ήταν: «Περί Αυτομάτων»

- Τον Ιούλιο του 2024, έδωσα διάλεξη στο Πανεπιστήμιο Θεσσαλίας ως προσκεκλημένος ομιλητής στο 1ο Φοιτητικό Συνέδριο Οικονομικών. Ο τίτλος ήταν: "Τα Μαθηματικά στις Οικονομικές Επιστήμες. ".

Θερινά Σχολεία

Έχω συμμετάσχει στα παρακάτω σχολεία σαν προσκεκλημένος ομιλητής:

- 2ο Θερινό Σχολείο Μη – Γραμμικής Ανάλυσης, Σάμος, 1994.
- 3ο Θερινό Σχολείο Μη – Γραμμικής Ανάλυσης, Σάμος, 1995.
- 15ο Θερινό Σχολείο Χαοτικής Δυναμικής, Χαλκίδα 2003.

Επισκέψεις Ξένων Καθηγητών

Ήμουν υπεύθυνος για την επίσκεψη και παραμονή για 1 μήνα στην Ελλάδα, του καθηγητή Prasolov από την Αγ. Πετρούπολη, στα πλαίσια επιστημονικών ανταλλαγών μεταξύ των πανεπιστημίων.

e-learning

Είμαι ακαδημαϊκός υπεύθυνος διαφόρων προγραμμάτων πληροφορικής του προγράμματος e-learning του Πανεπιστημίου Αθηνών.

ΚΡΙΤΗΣ ΕΛΙΔΕΚ
Έχω εργασθεί ως κριτής ερευνητικών προτάσεων του ΕΛΙΔΕΚ:
4η Προκήρυξη Δράσης «Επιστήμη και Κοινωνία» – Εμβληματική Δράση – «Παρεμβάσεις προς αντιμετώπιση των οικονομικών και κοινωνικών επιπτώσεων της πανδημίας COVID-19»

Ολυμπιάδες

Έλαβα μέρος στην Διεθνή Ολυμπιάδα Οικονομικών σαν εξεταστής και αξιολογητής, που έλαβε χώρα στον Βόλο το καλοκαίρι του 2023.

Α. 5. ΔΙΟΙΚΗΤΙΚΑ ΚΑΘΗΚΟΝΤΑ

Κατά την διάρκεια της θητείας μου στο Τμήμα Οικονομικών Επιστημών του Πανεπιστημίου Αθηνών, έχω συμμετάσχει στις κάτωθι επιτροπές:

- Επιτροπή Μεταγγραφών (1999-2001)
- Επιτροπή Πρωτοετών
- Τριμελής Επιτροπή για την εκλογή μέλους ΔΕΠ (βαθμίδα Λέκτορα) στη θέση

Μαθηματικά – Πληροφορική. (2002)

- Επιτροπή Οικονομικής Διαχείρισης Τμήματος (2005-2009)
- Τριμελής Επιτροπή για την εκλογή μέλους ΔΕΠ (βαθμίδα Επίκουρου Καθηγητή) στη θέση Μαθηματικά – Πληροφορική. (2009)
- Διοικούσα Επιτροπή Διδακτορικού (2014 - 2019)
- Ομάδα Εξωτερικής Αξιολόγησης (2013 – Σήμερα)
- Διοικούσα Επιτροπή Μεταπτυχιακού Οικονομικής Δικτύων.
- Επταμελής Επιτροπή για την εξέλιξη μέλους ΔΕΠ στην βαθμίδα του Αναπληρωτή Καθηγητή.
- Τριμελής Επιτροπή για την μονιμοποίηση μέλους ΔΕΠ στην βαθμίδα του Επίκουρου Καθηγητή.
- Επιτροπή συγγραφής τευχών προκήρυξης για τον διαγωνισμό σίτισης του ΕΚΠΑ.

και έχω αναλάβει τις κάτωθι διοικητικές θέσεις

- Υπεύθυνος Προγράμματος Εξετάσεων και Επιτηρήσεων (2003 - 2005)
- Διευθυντής Τομέα Μαθηματικών-Πληροφορικής(2013 - 2019)
- Διευθυντής Εργαστηρίου Πληροφορικής (2013 - 2019)
- Διευθυντής Διδακτορικού Προγράμματος Οικονομικού Τμήματος (2014 – 2019, 2024-2026)
- Αντιπρόσωπος Σχολής στην Επιτροπή Ερευνών του ΕΛΚΕ του ΕΚΠΑ (2015-2017)
- Αναπληρωτής Πρόεδρος Τμήματος Οικονομικών Επιστημών ΕΚΠΑ(2018-2020)
- Αντιπρόσωπος Σχολής στο ΚΕΔΙΒΙΜ ΕΚΠΑ (2021-2024)
- Υπεύθυνος elearning εξωτερικού, e-learnin ΕΚΠΑ (2021-2023)
- Προεδρεύων Τμήματος Οικονομικών Επιστημών ΕΚΠΑ(2019-2020)
- Μέλος της Συγκλήτου του ΕΚΠΑ (2019-2025)
- **Πρόεδρος Τμήματος Οικονομικών Επιστημών ΕΚΠΑ**(2020-2025)
- **Πρόεδρος ΔΣ, Ευγενιδείου Θεραπευτηρίου (2023-2025)**

SECTION B

ΕΠΙΣΤΗΜΟΝΙΚΕΣ ΕΡΓΑΣΙΕΣ-PAPERS

B.1. STATISTICS

Papers in peer review journals and volumes

YEAR	*I AM THE ONLY AUTHOR*	*I AM CO-AUTHOR*	*SUM*
1989	-	1	1
1991	-	1	1
1993	2	2	4
1995	1	1	2
1996	-	1	1
1997	1	1	2
1998	-	2	2
1999	1	-	1
2000	2	-	2
2001	1	1	2
2002	1	0	1
2004	-	1	1
2005	-	1	1
2006	-	1	1
2007	1	-	1
2008	1	3	4
2009	1	-	1
2010	-	1	1
2011	1	1	2
2013	-	1	1
2014	1	-	1
2016	1	1	2
2017	-	3	3
2018	-	1	1
2019	-	1	1
2021	-	2	2
2022	-	1	1
2023	1	-	1
2014	-	2	2
Sum	**16**	**30**	**46**

Papers per Journal

JOURNAL	I AM THE ONLY AUTHOR	I AM CO-AUTHOR	SUM	IMPACT FACTORS
IEEE TAC	2	-	2	3.167
Automatica	1	-	1	3.132
Int. Journal Of Control	2	2	4	1.137
Phys. Rev. B	-	1	1	3.664
Jour. of Difference Eqs	1	1	2	0.926
IMA Control	4	3	7	0.967
Nonlinear Dynamics	1	1	2	2.419
MTNS Volume	-	1	1	
Jour. Franklin Inst.	1	1	2	2.260
Bulletin Greek Math. Soc.	1	-	1	
Indian Jour. Of Math.	-	1	1	0.27
International Journal of Systems Science	-	1	1	1.579
Applied Math-E-Notes	1		1	
Economic Bulletin	-	1	1	
Economic Modeling		1	1	0.834
Journal of Economic Dynamics & Control		1	1	1.057
Revue Economique		1	1	
Intelligent Information Management		1	1	
International Review of Applied Economics		1	1	
Applications of Mathematics and Informatics in Siences and Engineering		1	1	
Applied Mathematics and Computation	1	-	1	1.6
Computational Economics		2	2	
International Journal of Difference Equations.		2	2	
Economic Structures		2	2	
Vestnik of Saint Petersbug University		1	1	
FACTA UNIVERSITATIS		1	1	
Results in Applied Mathematics			1	
International Journal of Information Technology & Decision Making,			1	
Mathematics MDPI	1		1	
Review of Economics and Economic Methodology Movement for Economic Pluralism		1	1	
Sum	16	30	46	

Congresses

YEAR	I AM THE ONLY AUTHOR	I AM CO-AUTHOR	SUM
1991	-	1	1
1993	-	1	1
1994	1	-	1
1995	1	1	2
1996	1	1	2
1997	1	-	1
1998	1	-	1
2000	-	1	1

2003	2	5	7
2004	-	2	2
2005	1	-	1
2006		1	1
2007	2		2
2008		2	2
2011		1	1
2012		1	1
2013		1	1
2014	1	1	2
2015		5	5
2018		1	1
2021		2	2
2022		4	4
Sum	11	31	42

Citations

PAPER	Self-Citations	NON-SELF CITATIONS	SUM
J. Tsinias – S. Kotsios – N. Kalouptsidis.,TOPOLOGICAL DYNAMICS OF DISCRETE TIME SYSTEMS.Proceeding of the International Symposium MTNS – 89, vol. II, Birkhauser, p 457-463, (1989).	6	7	13
G. Papavassiliou – A. Anagnostopoulos - F. Milia – R. Blinc – S. Kotsios, DISCRETE LATICE EFFECTS AND THE PHASON GAP OF INCOMMENSURATE SYSTEMS. Physical Review B, Volume 44, Number 14, pp 7283-7288, (1991).		6	6
S.Kotsios-N.Kalouptsidis, THE MODEL MATCHING PROBLEM FOR A CERTAIN CLASS OF NONLINEAR SYSTEMS. International Journal of Control, VOL. 57, No 4, pp 881-919, (1993).	22	16	38
S.Kotsios-N.Kalouptsidis,,BIBO STABILITY CRITERIA FOR A CERTAIN CLASS OF NONLINEAR SYSTEMS. International Journal of Control, VOL. 58, No 3, pp 707-730, (1993).	20	10	28
S.Kotsios, SOME TOPOLOGICAL DYNAMICS PROPERTIES OF DISCRETE TIME CONTROL SYSTEMS. IMA Journal of Mathematical Control and Information, VOL. 10, pp 149-155, (1993).	1	3	4
S.Kotsios, A NOTE ON BIBO STABILITY OF BILINEAR SYSTEMS. Journal of the Franklin Institute, VOL. 332B, No 6, pp 755-760, (1995).	4	14	18
S. Kotsios – D. Lappas A DESCRIPTION OF 2 – DIMENSIONAL DISCRETE POLYNOMIAL DYNAMICS. IMA Journal of Mathematical Control and Information, 13, pp 409-428, (1996).	12	1	13
S.Kotsios, FINITE INPUT/OUTPUT REPRESENTATION OF A CLASS OF VOLTERRA POLYNOMIAL SYSTEMS. Automatica, VOL. 33, No 2, pp 257-262 (1997).	5	10	15
S. Kotsios-Or. Feely SOME RESULTS ON SPECIAL DOUBLE-LOOP ΣΔ-MODULATORS. Nonlinear Dynamics 13 : 59-82, (1997).	1	1	2
S. Kotsios-Or. Feely A BIBO STABILITY THEOREM FOR A TWO DIMENSIONAL FEEDBACK DISCRETE SYSTEM WITH DISCONTINUITIES. J. Franklin inst. Vol. 335B, No. 3, pp 533-537, (1998).		5	4
S.Kotsios – O.Feely, THE MODEL MATCHING PROBLEM FOR A SPECIAL CLASS OF			

DISCRETE SYSTEMS WITH DISCONTINUITY. IMA Journal of Mathematical Control and Information, 15, 93-104, (1998).	2	4	6
S. Kotsios TRANSFORMATION OF FINITE DEGREE DISCRETE VOLTERRA SYSTEMS WITH CROSS-PRODUCTS TO FINITE INPUT/OUTPUT FORMS. IEEE Trans. on Autom. Control, Vol. 44, No 7. pp 1460-1464, (1999).	2	2	4
S.Kotsios,A NEW FACTORIZATION OF SPECIAL NONLINEAR DISCRETE SYSTEMS AND ITS APPLICATIONS. IEEE Trans. on Autom. Control, Vol 45, No 1, pp 24-33, (2000).	7	1	8
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S. Kotsios-D. Lappas A STABILITY RESULT FOR "SEPARABLE" NONLINEAR DISCRETE SYSTEMS. IMA Journal of Mathematical Control and Information, 18, 325-339, (2001).	3	1	4
S.Kotsios, AN APPLICATION ON RITT'S REMAINDER ALGORITHM TO DISCRETE POLYNOMIAL CONTROL SYSTEMS. IMA Journal of Mathematical Control and Information, 18, 19-29, (2001).	8	5	13
S.Kotsios, ON DETECTING SOLUTIONS OF POLYNOMIALS NONLINEAR DIFFERENCE EQUATIONS. Journal of Difference Equations and Applications, (2002), Vol. 8 (6), pp 551-571.	8	3	11
S.Kotsios and J.Leventidis A FEEDBACK POLICY FOR A MODIFIED SAMUELSON-HICKS MODEL. International Journal of Systems Science, vol 35, (6), pp 331-341, 2004.	16	4	20
E.Petrakis and S.Kotsios THE DYNAMICS OF STRUCTURAL CHANGE UNDER RISK INFLUENCE. Economics Bulletin, Vol 15, No 7, pp 1-8, 2005.		1	1
S.Kotsios THE MODEL MATCHING PROBLEM FOR A CLASS OF POLYNOMIAL NON-LINEAR DISCRETE INPUT - OUTPUT SYSTEMS WITH CROSS -PRODUCTS. AN ALGORITHMIC APPROACH. INTERNATIONAL JOURNAL OF CONTROL Vol. 82, No. 4, April 2009, 620–642.	1		1
S. Kotsios – O. Feely A CONTRIBUTION TO THE SYMBOLIC DYNAMICS OF THE DOUBLE ΣΔ-MODULATORS. *The 4th Workshop on Nonlinear Dynamics of Electronic Systems, Seville, Spain, 1996.*		1	7
S.Kotsios THE PROBLEM OF POSITIVE DEFINETENESS THROUGH A FORMAL FACTORIZATION OF POLYNOMIALS. HERCMA 2003, ATHENS.	1		1
I. Karafyllis – S. Kotsios. CONDITIONS FOR GLOBAL ASYMPTOTIC STABILIZATION OF DISCRETE-TIME SYSTEM. NOLCOS2004, Munich.	1		1
S.Kotsios (Chairman) A MODEL MATCHING ALGORITHM FOR A CLASS OF NONLINEAR DISCRETE SYSTEMS. A SYMBOLIC APPROACH. CDC-ECC 2005, Seville, SPAIN.	2	5	7
I. Karafyllis - S.Kotsios NECESSARY AND SUFFICIENT CONDITIONS FOR ROBUST GLOBAL ASYMPTOTIC STABILIZATION OF DISCRETE TIME SYSTEMS. Journal of Difference Equations and Applications, (2006), Vol. 12 (7), pp 741-768.	3	7	10
Stelios Kotsios THE LINEAR FACTORS OF NONLINEAR DISCRETE SYSTEMS WITH CROSS-PRODUCTS AND THEIR APPLICATION TO THE MODEL MATCHING PROBLEM. *Proceedings of the European Control Conference 2007 Kos, Greece, July 2-5, 2007*	1		1
S. Kotsios AN ALGORITHM FOR DETECTING " LINEAR " SOLUTIONS OF NONLINEAR POLYNOMIAL DIFFERENTIAL EQUATIONS. Applied Mathematics E-Notes, 7(2007), 102-110	0	1	1
G. Athanasiou – I. Karafyllis - S.Kotsios PRIZE STABILIZATION USING BUFFER STOCKS. Journal of Economic Dynamics & Control 32 (2008) 1212–1235	18	30	48
George Athanasiou, Stelios Kotsios AN ALGORITHMIC APPROACH TO EXCHANGE RATE STABILIZATION. Economic Modelling 25 (2008) 1246–1260.	7	3	10
Ilias Kostarakos-Stelios Kotsios "FISCAL POLICY IN GREECE IN THE AFTERMATH	10	5	15

OF THE CRISIS: AN ALGORITHMIC APPROACH", *Computational Economics 51, 893-911,2018.*			
Ilias Kostarakos-Stelios Kotsios "FEEDBACK POLICY RULES FOR GOVERNMENT SPENDING: AN ALGORITHMIC APPROACH", It has been accepted for publication inJournal of Economic Structures.	7	3	10
Hassan Ugail, Akshai Aggarwal, Yannis Bakopoulos, Stelios Kotsios Description of 3D Morphology using the Concept of the Divider Set Accepted for publication in CyberWorlds 2008 September 2008.		1	1
Stelios Kotsios , An Algorithm For Designing Feedback Stabilizers of Nonlinear Polynomial Systems Proceedings of the 15th Mediterranean Conference on Control and Automation, July 27-29, 2007, Athens, Greece.	2	1	3
B. Dalamagas - S.Kotsios PERSONAL INCOME TAX: INCENTIVE OR DISINCENTIVE TO WORK EFFORT ? REVUE ECONOMIQUE, Volume 59, 4, July 2008, pp 777-812.		2	2
S.Kotsios "A SYMBOLIC COMPUTATIONAL ALGORITHM FOR DESIGNING FEEDBACK STABILIZERS OF POLYNOMIAL NONLINEAR SYSTEMS" IMA Journal of Mathematical Control and Information, Volume 28, Issue 4, December 2011, Pages 463–474, https://doi.org/10.1093/imamci/dnr016	2	3	5
S.Kotsios, "AN ALGORITHMIC METHOD FOR CHECKING GLOBAL ASYMPTOTIC STABILITY OF NONLINEAR POLYNOMIAL SYSTEMS WITH PARAMETERS", Applied Mathematics and Computation, Volume 240, 1 August 2014, Pages 358–367.		1	1
Dimitris Pissas – St. Kotsios. An application of Grey Relational Analysis on the Theory of Optimal Random Audit Policy		1	1
E. Camouzis – St. Kotsios. "May's Host–Parasitoid geometric series model with a variable coefficient" Results in Applied Mathematics 11 (2021), https://doi.org/10.1016/j.rinam.2021.100160.		3	3
Necessary and Sufficient Conditions for Debt Sustainability. True or a Paradox? E Camouzis, S Kotsios International Journal of Difference Equations 14 (2), 91-113		2	2
Spyrakis, V., & Kotsios, S. (2021). Public debt dynamics: the interaction with national income and fiscal policy. Journal of Economic Structures, 10*(1), 1-22.*		8	8
Spyridon D. Mourtas, Vasilios N. Katsikis, Emmanouil Drakonakis and Stelio Kotsios. Stabilization of Stochastic Exchange Rate Dynamics Under Central Bank Intervention Using Neuronets, International Journal of Information Technology & Decision Making, https://doi.org/10.1142/S0219622022500560, 2022		9	9
Sum	173	184	357

B.2. A SHORT LIST OF ALL PAPERS

PAPERS IN JOURNALS

1. J. Tsinias – S. Kotsios – N. Kalouptsidis. TOPOLOGICAL DYNAMICS OF DISCRETE TIME SYSTEMS. **Proceeding of the International Symposium MTNS – 89, vol. II, Birkhauser, p 457-463, (1989).**

1. **G. Papavassiliou – A. Anagnostopoulos - F. Milia – R. Blinc – S. Kotsios** DISCRETE LATTICE EFFECTS AND THE PHASON GAP OF INCOMMENSURATE SYSTEMS. **Physical Review B, Volume 44, Number 14, pp 7283-7288, (1991).**

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5. **S. Kotsios** SOME TOPOLOGICAL DYNAMICS PROPERTIES OF DISCRETE TIME CONTROL SYSTEMS. **IMA Journal of Mathematical Control and Information, VOL. 10, pp 149-155, (1993).**

6. **Y. Bakopoulos – S. Kotsios** THE STUDY OF A SPECIFIC DIFFERENTIAL EQUATION. **Indian Journal of Pure and Applied Math., 26(3): pp 241-247, March (1995).**

7. **S. Kotsios** A NOTE ON BIBO STABILITY OF BILINEAR SYSTEMS. Journal of the **Franklin Institute, VOL. 332B, No 6, pp 755-760, (1995).**

8. **S. Kotsios – D. Lappas** A DESCRIPTION OF 2 – DIMENSIONAL DISCRETE POLYNOMIAL DYNAMICS. **IMA Journal of Mathematical Control and Information, 13, pp 409-428, (1996).**

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10. **S. Kotsios-Or. Feely** SOME RESULTS ON SPECIAL DOUBLE-LOOP ΣΔ-MODULATORS. **Nonlinear Dynamics 13 : 59-82, (1997).**

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13. **S. Kotsios** TRANSFORMATION OF FINITE DEGREE DISCRETE VOLTERRA SYSTEMS WITH CROSS-PRODUCTS TO FINITE INPUT/OUTPUT FORMS. **IEEE Trans. on Autom. Control, Vol. 44, No 7. pp 1460-1464, (1999).**

15. S. Kotsios A NEW FACTORIZATION OF SPECIAL NONLINEAR DISCRETE SYSTEMS AND ITS APPLICATIONS. IEEE Trans. on Autom. Control, Vol 45, No 1, pp 24-33, (2000).

16. S. Kotsios SYMBOLIC SEQUENCES GENERATED BY A SPECIAL CLASS OF DISCRETE SYSTEMS WITH DISCONTINUITY AND INPUT. Nonlinear Dynamics 22: 175-191, (2000).

17. S. Kotsios-D. Lappas A STABILITY RESULT FOR "SEPARABLE" NONLINEAR DISCRETE SYSTEMS. IMA Journal of Mathematical Control and Information, 18, 325-339, (2001).

18. S. Kotsios AN APPLICATION ON RITT'S REMAINDER ALGORITHM TO DISCRETE POLYNOMIAL CONTROL SYSTEMS. IMA Journal of Mathematical Control and Information, 18, 19-29, (2001).

19. S. Kotsios ON DETECTING SOLUTIONS OF POLYNOMIALS NONLINEAR DIFFERENCE EQUATIONS. Journal of Difference Equations and Applications, (2002), Vol. 8 (6), pp 551-571.

20. S.Kotsios and J.Leventidis A FEEDBACK POLICY FOR A MODIFIED SAMUELSON-HICKS MODEL. International Journal of Systems Science, vol 35, (6), pp 331-341, 2004.

21.E.Petrakis and S.Kotsios THE DYNAMICS OF STRUCTURAL CHANGE UNDER RISK INFLUENCE. Economics Bulletin, Vol 15, No 7, pp 1-8, 2005.

22. I. Karafyllis - S.Kotsios NECESSARY AND SUFFICIENT CONDITIONS FOR ROBUST GLOBAL ASYMPTOTIC STABILIZATION OF DISCRETE TIME SYSTEMS. Journal of Difference Equations and Applications, (2006), Vol. 12 (7), pp 741-768.

23. S. Kotsios AN ALGORITHM FOR DETECTING " LINEAR " SOLUTIONS OF NONLINEAR POLYNOMIAL DIFFERENTIAL EQUATIONS. Applied Mathematics E-Notes, 7(2007), 102-110

24. S.Kotsios OPEN-LOOP LINEARIZATION OF NON-LINEAR DISCRETE INPUT – OUTPUT SYSTEMS THROUGH SIMPLIFICATION ALGORITHMS. IMA Journal of Mathematical Control and Information (2008) 25, 123–139

25. G. Athanasiou – I. Karafyllis - S.Kotsios PRIZE STABILIZATION USING BUFFER STOCKS. Journal of Economic Dynamics & Control 32 (2008) 1212–1235

26. B. Dalamagas - S.Kotsios PERSONAL INCOME TAX: INCENTIVE OR DISINCENTIVE TO WORK EFFORT ? REVUE ECONOMIQUE, Volume 59, 4, July 2008, pp 777-812.

27. George Athanasiou, Stelios Kotsios AN ALGORITHMIC APPROACH TO EXCHANGE RATE STABILIZATION. Economic Modelling 25 (2008) 1246–1260.

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31. S.Kotsios "A SYMBOLIC COMPUTATIONAL ALGORITHM FOR DESIGNING FEEDBACK STABILIZERS OF POLYNOMIAL NONLINEAR SYSTEMS" IMA J Math Control Info (2011) 28(4): 463-474.

32. S.Kotsios – D.Lappas "ABOUT MODEL COMPLEXITY OF 2-D POLYNOMIAL DISCRETE SYSTEMS. AN ALGEBRAIC APPROACH" Volume: Applications of Mathematics and Informatics in Siences and Engineering, Springer Optimization and Its Applications, 2013.

33. S.Kotsios, "AN ALGORITHMIC METHOD FOR CHECKING GLOBAL ASYMPTOTIC STABILITY OF NONLINEAR POLYNOMIAL SYSTEMS WITH PARAMETERS", Applied Mathematics and Computation, Volume 240, 1 August 2014, Pages 358–367.

34. S.Kotsios, "FEEDBACK BOUNDED STABILIZATION OF CERTAIN DISCRETE VOLTERRA SYSTEMS", International Journal of Control Volume 89, 2016 - Issue 6, 1214-1221.

35. Ilias Kostarakos-Stelios Kotsios "FISCAL POLICY IN GREECE IN THE AFTERMATH OF THE CRISIS: AN ALGORITHMIC APPROACH", Comput Econ (2017). doi:10.1007/s10614-017-9650-3

36. S. Kotsios-D. Lappas "THE SYSTEMS COMPLEXITY PROBLEM FOR NONLINEAR POLYNOMIAL DISCRETE SYSTEMS WITH MANY DELAYS AND TWO COMPONENTS. AN ALGEBRAIC APPROACH." International Journal of Difference Equations ISSN 0973-6069, Volume 12, Number 1, pp. 55–106 (2017)

37. Ilias Kostarakos-Stelios Kotsios "FEEDBACK POLICY RULES FOR GOVERNMENT SPENDING: AN ALGORITHMIC APPROACH", Economic Structures (2017) 6: 5.

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41. E. Camouzis – St. Kotsios. "May's Host–Parasitoid geometric series model with a variable coefficient" Results in Applied Mathematics 11 (2021), https://doi.org/10.1016/j.rinam.2021.100160.

42. Spyrakis, V., & Kotsios, S. (2021). Public debt dynamics: the interaction with national income and fiscal policy. Journal of Economic Structures, 10*(1), 1-22*.

43. Spyridon D. Mourtas, Vasilios N. Katsikis, Emmanouil Drakonakis and Stelio Kotsios. Stabilization of Stochastic Exchange Rate Dynamics Under Central Bank Intervention Using Neuronets, International Journal of Information Technology & Decision Making, https://doi.org/10.1142/S0219622022500560, 2022

44. Stelios Kotsios. Feedback Control Techniques for a Discrete Dynamic Macroeconomic Model with Extra Taxation: An Algebraic Algorithmic Approach, Mathematics MDPI 2023, 11, 4213. https://doi.org/10.3390/math11194213

45. Charalampos-Anastasios Domenikos, Stelios Kotsios. A Post-Keynesian Model for Controlling GDP and Debt. Review of Economics and Economic Methodology Movement for Economic Pluralism 2024, Vol. 7(1), 1-29.

46. Emmanouil Drakonakis, Stelios Kotsios. Stochastic Exchange Rate Dynamics, Intervention Dynamics and the Market Efficiency Hypothesis. Computational Economics, https://doi.org/10.1007/s10614-024-10581-w, April 2024.

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1. S. Kotsios – N. Kalouptsidis THE MODEL MATCHING PROBLEM FOR A CERTAIN CLASS OF NONLINEAR SYSTEMS. Proceedings of the 30th Conference on Decision and Control Brighton, England 1991, pages 1809-1810.

2. S. Kotsios – N. Kalouptsidis THE ADAPTIVE CONTROL FOR A CERTAIN CLASS OF NONLINEAR SYSTEMS. Proceedings of IEEE Mediterranean Symposium on new Directions in Control Theory and Applications, Crete 1993.

3. S. Kotsios A DESCRIPTION OF 2-D DISCRETE POLYNOMIALS NONLINEAR SYSTEMS. Proceedings of the second Greek Symposium on Nonlinear Systems, Fractals and Chaos, Xanthi 1994.

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5. S. Kotsios A SYSTEM APPLICATION OF THE STAR-PRODUCT. Third European Control Conference, ECC95, 1995, Rome, Italy.

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8. S. Kotsios SOME FACTORIZATIONS OF SPECIAL NONLINEAR DISCRETE SYSTEMS AND THEIR APPLICATIONS. Fourth European Control Conference, ECC97, 1997, Brussels, Belgium.

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10. Στ. Κώτσιος – Διον. Λάππας CONTRIBUTION TO THE STUDY OF NONLINEAR DISCRETE SYSTEMS . 17th Congress of the Greek Mathematical Society, 2000, Athens.

11. P.E.Petrakis – S. Kotsios «Growth, Entrepreneurship and Risk: The positive connection», Globalization and Entrepreneurship: Fears, Challenges and Opportunities Conference, *Croatia, (24 – 26 April 2003)*.

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22. Stelios Kotsios An Algorithm For Designing Feedback Stabilizers of Nonlinear Polynomial Systems Proceedings of the 15th Mediterranean Conference on Control and Automation, July 27-29, 2007, Athens, Greece.

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24. Hassan Ugail, Akshai Aggarwal, Yannis Bakopoulos, Stelios Kotsios Description of 3D Morphology using the Concept of the Divider Set Accepted for publication in CyberWorlds 2008 September 2008.

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26. S.Kotsios, D.Pissas Effectiveness of the Cutoff Audit Rule and Inequality of Income 1o National Congress on Applied Mathematics and Operational Research, Athens 2011.

27.Stelios Kotsios, Dionyssios Lappas "Linear Similarity of Nonlinear Polynomial Discrete Systems. An Algebraic Approach." Conference of Modern Mathematical Methods in Science and Technology (M3ST), 2012-08-26 at Kalamata, Greece.

28. Ilias Kostarakos-Stelios Kotsios, "LINEAR FEEDBACK METHODS AND PUBLIC DEBT" presented at 6th PhD Conference in Economics 2013, 16-17 September 2013, Athens, Greece.

29. Ilias Kostarakos-Stelios Kotsios, "CONTROLLING PUBLIC DEBT WITHIN A LINEAR FEEDBACK FRAMEWORK: AN ALGORITHMIC APPROACH", accepted at 1st Hellenic Open Business Administration International Conference, 8-9 March 2014, Athens, Greece.

30. Stelios Kotsios (Chairman), "FEEDBACK BOUNDED STABILIZATION OF CERTAIN DISCRETE VOLTERRA SYSTEMS", ICINCO 2014, 1-3 September, Vienna, Austria.

31. Ilias Kostarakos-Stelios Kotsios, "Fiscal Policy, Linear Feedback Control and Debt Stabilization", 1st International Conference in Economics and Business, Hellenic Open University, 6-7 February 2015, Athens, Greece.

32. Ilias Kostarakos-Stelios Kotsios, "Fiscal Policy by using Linear Feedback – Laws for Debt Stabilizing", 1st AMEF Conference, 6-7 April 2015, Thessaloniki, Greece.

33. Ilias Kostarakos-Stelios Kotsios, "An Algorithmic Linear Feedback Approach to the Design of Fiscal Policy: The Cases of Greece and Cyprus", 7th Biennial PhD Symposium on Contemporary Greece and Cyprus, London School of Economics (LSE), 4-5 June 2015, London, UK.

34. Ilias Kostarakos-Stelios Kotsios, "Controlling National Debt Dynamics A First Approach", Workshop on"Complex Systems: Modelling, Emergence and Control " City University on 18th, 19th June 2015, London, UK.

35. Ilias Kostarakos-Stelios Kotsios, "FISCAL POLICY, LINEAR FEEDBACK CONTROL AND DEBT STABILIZATION VIA LINEAR FEEDBACK CONTROL", 3rd International PhD Meeting of Thessaloniki in Economics 2015, 19-20 June, 2015, UoM, Thessaloniki, Greece.

36. V. Spyrakis-St. Kotsios, "Public Debt Dynamics: The Interaction with National Income" 14th Biennial Athenian Policy Forum (APF) Conference hosted by the University of Piraeus, July 6-8, 2018.

37. Charalampos-Anastasios Domenikos, Stelios Kotsios*, "* Controlling GDP and Debt with a Post-Keynesian model *"*, International Conference on Business & Economics , HELLENIC OPEN UNIVERSITY, Athens, Greece, MAY 7-8, 2021.

38. Charalampos-Anastasios Domenikos, Stelios Kotsios. "Controlling GDP and debt with a Post-Keynesian model. "International Conference on Business and Economics of the Hellenic Open University, 7-8/5/2021 .

39. Charalampos-Anastasios Domenikos, Stelios Kotsios. "A Kaleckian model for Controlling GDP and debt" 6-8/7/2022 24th conference of Association of Heterodox Economics (AHE) at SOAS University, London. Frederic S. Lee Prize" for the best paper by an early career researcher.

40. Emmanouil Drakonakis, Stelios Kotsios, "Stabilization of Stochastic Exchange Rate Dynamics Under Central Bank Intervention Between Covid-19", University of Thessaly, Covid Conference. 2022

41. Emmanouil Drakonakis, Stelios Kotsios, "Stochastic Exchange Rate Dynamics, Intervention Dynamics and the Market Efficiency Hypothesis or Stabilization of Stochastic Exchange Rate Dynamics Under Central Bank Intervention Using Neuronets", 19th Summer School Risk Finance and Stochastics RFS-2022, Athens University of Economics and Business. 2022.

42. Charalampos-Anastasios Domenikos, Stelios Kotsios," A New Kaleckian model for Controlling GDP and debt", 7-9/9/2022 34th conference of European Association for Evolutionary Political Economy (EAEPE), Naples.

B.3. THE PAPERS ANALYTICALLY

Here is a list containing the papers in detail.

PAPERS IN JOURNALS

1. J. Tsinias – S. Kotsios – N. Kalouptsidis.

Topological Dynamics of Discrete Time Systems.

Proceeding of the International Symposium MTNS – 89, vol. II, Birkhauser, p 457-463, (1989).

Abstract In this paper necessary and sufficient Lyapunov-like conditions are presented for the absolutely

asymptotic stability of discrete-time control systems in the vicinity of a compact set.

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4. **I. Karafyllis**, "Non-uniform in time robust global asymptotic stability for discrete-time systems and applications to numerical analysis," *IMA Journal of Mathematical Control and Information* 23 (2006) 11–41.
5. **I. Karafyllis**, "Non-uniform in time robust global asymptotic output stability for discrete-time systems," *International Journal of Robust and Nonlinear Control* 16(4) (2006) 191–214.
6. **Z. Zhijun**, "Converse Lyapunov theorems for nonautonomous discrete …" (*Springer / Journal of Mathematical Sciences* page), includes the MTNS-89 reference in its bibliography (listed there as Birkhäuser, Boston, 1990, pp. 457–463). (Springer)
7. **J. Tsinias, N. Kalouptsidis**, "Output Feedback Stabilization of Discrete-Time Control Systems," *IMA Journal of Mathematical Control and Information* 7 (1990) 257–268.

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8. **S. Kotsios**, "Some Topological Dynamics Properties of Discrete-Time Control Systems," *IMA Journal of Mathematical Control and Information* 10 (1993) 149–155. (ResearchGate)
9. **S. Kotsios, I. Karafyllis**, "Conditions for global asymptotic stabilization of discrete-time systems," IFAC event paper / proceedings entry (NOLCOS 2004 / IFAC). (ScienceDirect)
10. **I. Karafyllis, S. Kotsios**, "Necessary and sufficient conditions for robust global asymptotic stabilization of discrete-time systems," *Journal of Difference Equations and Applications* 12(7) (2006) 741–768. (math.ntua.gr)
11. **George Athanasiou, Iasson Karafyllis, Stelios Kotsios** "Price stabilization using buffer stocks" Journal of Economic Dynamics and Control, Volume 32, Issue 4, April 2008, pp. 1212–1235.

2. G. Papavassiliou – A. Anagnostopoulos - F. Milia – R. Blinc – S. Kotsios

Discrete Lattice Effects and the Phason Gap of Incommensurate Systems.

Physical Review B, Volume 44, Number 14, pp 7283-7288, (1991).

Abstract The effect of thermal fluctuations and discreteness of the crystal lattice on the pinning of the modulation wave and the phason gap of structurally incommensurate systems is examined. Very close to the paraelectric-to-incommensurate transition temperature T_i, the phason gap is vanishingly small, but at slightly lower temperatures it takes on a nonzero value. Near the lower incommensurate-to-commensurate transition temperature T_c, where floating effects are negligible, the pinning may lead to a "devil's staircase"-like temperature dependence of the phason gap.

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4. **G. Papavassiliou, A. Leventis, F. Milia, J. Dolinsek**, "Diffusionlike Motion of the Modulation Wave in Structurally Incommensurate Systems: A NQR Study," *Physical Review Letters* 74(12), 2387–2390 (1995). *(DOI: 10.1103/PhysRevLett.74.2387)*
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3. S. Kotsios

About Special Funnels of Dynamical Systems Without Uniqueness on the Plane.

Bulletin of the Greek Mathematical Society, vol. 35, pp 81-92, (1993).

Abstract: This paper is concerned with the study of special funnels of dynamical systems without uniqueness. We define the singular points of non-uniqueness and we prove that, in the case of planar systems, the corresponding attainable sets are curves.

4. S. Kotsios – N. Kalouptsidis

The Model Matching Problem for a Certain Class of Nonlinear Systems.

International Journal of Control, VOL. 57, No 4, pp 881-919, (1993).

ABSTRACT : In this paper sufficient conditions for the solution of the model matching problem and for a specific class of nonlinear systems, represented by the so-called δ-polynomials and linear desired models is described. An algorithm yielding causal controllers and a BIBO closed-loop connection is supplied.

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5. S. Kotsios – N. Kalouptsidis

BIBO Stability Criteria for a Certain Class of Nonlinear Systems.

International Journal of Control, VOL. 58, No 3, pp 707-730, (1993).

Abstract: In this paper sufficient conditions for BIBO stability for a specific class of nonlinear systems are developed.

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6. S. Kotsios

Some Topological Dynamics Properties Of Discrete Time Control Systems.

IMA Journal of Mathematical Control and Information, VOL. 10, pp 149-155, (1993).

ABSTRACT: This paper is concerned with the study of certain stability properties of discrete time systems by means of topological methods. It turns out that suitably defined sets guarantee the stability of the reachable sets in the vicinity of compact sets. Furthermore special properties about affine control systems are given.

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7. Y. Bakopoulos – S. Kotsios

The Study Of A Specific Differential Equation.

Indian Journal of Pure and Applied Math., 26(3): pp 241-247, March (1995).

ABSTRACT: The equation y^2(x)+y'^2(x)=b+cos(x) is constructed as a part of a hypothetical problem in classical mechanics. It is solved in closed form. Then the behaviour of the solution curves is studied by methods of elementary quantitive analysis. Computer methods are employed in numerically solving and testing various hypotheses of their behaviour.

8. S. Kotsios

A Note On BIBO Stability Of Bilinear Systems.

Journal of the Franklin Institute, VOL. 332B, No 6, pp 755-760, (1995).

ABSTRACT: In this paper sufficient conditions for the BIBO stability of discrete bilinear systems are developed. They are based on the choice of suitable bounds for the coefficients of the system. Application to some rational systems is also described.

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Self Citation

16. **Stylianos Kotsios,** "Regional feedback linearisation and stabilisation of discrete bilinear input/output systems: An algorithmic approach",*International Journal of Control*, Vol. 99, No. 1, 2026, pp. 187–198.
17. **Stylianos Kotsios, Orla Feely,** "A BIBO stability theorem for a two-dimensional feedback discrete system with discontinuities", *Journal of the Franklin Institute*, Vol. 335, No. 3, 1998, pp. 533–537.

9. S. Kotsios – D. Lappas

A Description Of 2 – Dimensional Discrete Polynomial Dynamics.

IMA Journal of Mathematical Control and Information, 13, pp 409-428, (1996).

Abstract: A new algebraic method for the description of 2-D nonlinear polynomial discrete systems is developed via the so-called generalized mixed-operators. These operators is a generalization of δ-operators in order to include two dimensional discrete polynomial systems containing cross-products. Series of these operators are also introduced and their invertibility is investigated. This description is applied to some certain examples from control systems theory and nonlinear dynamics.

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Non-Self Citations

1. **Jefferson Osowsky, Carlos E. de Souza, D. Ferreira Coutinho,** "Regional stability of two-dimensional nonlinear polynomial Fornasini–Marchesini systems", *International Journal of Robust and Nonlinear Control*, Vol. 28, No. 6, 2018, pp. 2318–2339.

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Finite Input/Output Representation Of A Class Of Volterra Polynomial Systems.

Automatica, VOL. 33, No 2, pp 257-262 (1997).

ABSTRACT: In this paper the problem of finite input/output representation of a special class of nonlinear Volterra polynomial systems is studied via the notion of linear factorization of δ-series. Furthermore, for the solution of the problem an Euclidean type algorithm is used.

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    Proceedings of the 11th International Conference on Informatics in Control, Automation and Robotics (ICINCO), 2014, pp. 629–634.
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11. S. Kotsios-Or. Feely

Some Results On Dynamics Of Special Double-Loop ΣΔ-Modulators.

Nonlinear Dynamics 13 : 59-82, (1997).

Abstract. The Dynamic Behaviour Of A Specific Two-Dimensional State Space Model With Discontinuity Is Studied. This Model Arises From The Study Of Double-Loop ΣΔ-Modulators With Constant Input. Using Mathematical Tools We Explain Certain Simulation Results, And Some Properties Are Derived. Simulations Based On Time-Varying Input Are Also Provided.

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A Bibo Stability Theorem For A Two Dimensional Feedback Discrete System With Discontinuities.

J. Franklin inst. Vol. 335B, No. 3, pp 533-537, (1998).

Abstract: In This Paper Bibo Stability Of A State Space Difference Model, Arising From The Modeling Of ΣΔ-Modulators Is Examined, Via The Notion Of Proper Bounds Of The Coefficients. A Theorem Is Provided And Some Formulas For The Calculation Of Output Bounds Are Derived. © 1997

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13. S. Kotsios-Or. Feely

The Model Matching Problem For A Special Class Of Discrete Systems With Discontinuity.

IMA Journal of Mathematical Control and Information, 15, 93-104, (1998).

ABSTRACT: In this paper sufficient conditions for the solution of the model matching problem for a specific class of nonlinear discrete systems containing specific discontinuities and represented by the so-called δq-polynomials and linear desired models are described. An algorithm yielding causal controllers is supplied. Applications of the above results to ΣΔ-modulators are additionally provided.

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14. S. Kotsios

Transformation Of Finite Degree Discrete Volterra Systems With Cross-Products To Finite Input/Output Forms.

IEEE Trans. on Autom. Control, Vol. 44, No 7. pp 1460-1464, (1999).

ABSTRACT In this paper the notion of Discrete Volterra Systems containing cross-products among inputs and outputs, is examined via the so-called δε-operators. The problem of finite input/output representation is solved for a special class of these systems and a corresponding algorithm is supplied. An application concerning the bilinear systems is also given.

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A New Factorization Of Special Nonlinear Discrete Systems And Its Applications.

IEEE Trans. on Autom. Control, Vol 45, No 1, pp 24-33, (2000).

ABSTRACT: In this paper a new factorization of discrete non-linear systems is presented. This factorization is based on the star-product, an operation corresponding to the linear connection of systems. A relevant algorithm is developed, based on a theoretical background. Finally, some applications to system analysis, BIBO stability and feedback design are provided.

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Symbolic Sequences Generated By A Special Class Of Discrete Systems With Discontinuity And Input.

Nonlinear Dynamics 22: 175-191, (2000).

Abstract. In this paper, we study the symbolic sequences generated by a class of discrete systems. This class contains the double ΣΔ-modulators, a typical example of discrete time electronic systems with discontinuity and input. First we develop a general theory and then we apply it to some examples in order to obtain sets of inadmissible sequences.

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17. S. Kotsios-D. Lappas

A Stability Result For “Separable” Nonlinear Discrete Systems.

IMA Journal of Mathematical Control and Information, 18, 325-339, (2001).

ABSTRACT: The aim of this paper is the formulation of a stability result concerning a specific class of non-linear discrete systems. It is mainly based on a proper algebraic framework and the fact that certain non-linear systems remain invariant under the "star-product", an operation developed for the description of the time evolution of these systems.

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An Application On Ritt's Remainder Algorithm To Discrete Polynomial Control Systems

IMA Journal of Mathematical Control and Information, 18, 19-29, (2001).

ABSTRACT: In this paper we study the class of discrete polynomial non-linear systems via algebraic tools similar to those of Ritt's Differential Algebra. By means of the δ-operators we extend the notion of remainders and we develop a relevant algorithm. Finally we study the discrete case of the model-matching problem with linear or non-linear desired systems.

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On Detecting Solutions Of Polynomials Nonlinear Difference Equations.

Journal of Difference Equations and Applications, (2002), Vol. 8 (6), pp 551-571.

ABSTRACT In this paper a method for discovering solutions of nonlinear polynomial homogeneous difference equations is presented. It is based on the concepts of δ-operator and star-product. These notions create a proper algebraic background by means of which we can find linear equations "included" into the original nonlinear one and to seek for solutions among them. A corresponding algorithm and some examples are also provided.

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A Feedback Policy For A Modified Samuelson-Hicks Model.

International Journal of Systems Science, vol 35, (6), pp 331-341, 2004.

ABSTRACT: Under the assumption that the income Y_t follows a Samuelson-Hicks type of model we calculate a policy variable G_t, in closed form, so that Y_t satisfies an ideal law $Y_t=F(U^*_t)$, U^*_t being an influence variable. The approach uses some recently developed tools of nonlinear feedback design, it is fully parameterized and allows the dynamic change of the influence variable U^*_t. From the control theory point of view we solve a nonlinear model matching problem and produce a policy instrument that shapes the income Y_t within a desired family of behaviours.

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The Dynamics Of Structural Change Under Risk Influence.

Economics Bulletin, Vol 15, No 7, pp 1-8, 2005.

ABSTRACT: The paper is concerned with structural change in the growth process and the role of uncertainty. Uncertainty is conceived as the means of removing the obstacles of growth through the activation of knightian entrepreneurship. A dynamic stochastic model of continuous-time growth is proposed. The paper concludes that uncertainty affects economic growth and the rate of returns, and causes structural changes in portfolio shares of the two types of entrepreneurial events. Structural change depends mainly on intertemporal rate of substitution, productivity ratios, and finally intersectoral difference in return and risk.

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Necessary And Sufficient Conditions For Robust Global Asymptotic Stabilization Of Discrete Time Systems.

Journal of Difference Equations and Applications, (2006), Vol. 12 (7), pp 741-768.

ABSTRACT: We give Lyapunov-like conditions for non-uniform in time output stabilization of discrete-time systems. Particularly, it is proved that for a discrete-time control system there exists a (continuous) output stabilizing feedback if and only if there exists a (strong) output control Lyapunov function (OCLF). Moreover, strategies for the construction of continuous robust feedback stabilizers are presented.

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International Journal of Control, 82(4), 620–642.

23. S. Kotsios

An Algorithm For Detecting "Linear" Solutions Of Nonlinear Polynomial Differential Equations.

Applied Mathematics E-Notes, 7(2007), 102-110

Abstract: A symbolic computational algorithm which detects "linear" solutions of nonlinear polynomial differential equations of single functions, is developed in this paper.

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24. S.Kotsios

Open-Loop Linearization Of Non-Linear Discrete Input - Output Systems Through Simplification Algorithms.

IMA Journal of Mathematical Control and Information (2008) 25, 123–139

ABSTRACT: The problem of linear equivalence for a general class of non-linear systems is examined throughout this paper. A relevant algorithm is developed based on a factorization procedure. This factorization is based on the star product, an operation corresponding to the cascade connection of systems.

25. G. Athanasiou – I. Karafyllis - S.Kotsios

Prize Stabilization Using Buffer Stocks.

Journal of Economic Dynamics & Control 32 (2008) 1212–1235

ABSTRACT: The price stabilization problem is stated and solved for a nonlinear cobweb model with government stocks. It is shown that if the storage capacity for the commodity is sufficiently large then there exists a simple stabilization policy, called the 'keep supply at equilibrium (KSE)' policy, such that the equilibrium price is a global attractor for the corresponding closed-loop system. In addition, it is shown that if the government approximates the equilibrium supply with the average supply, stabilization is guaranteed. We refer to this policy as 'keep supply at average (KSA)'.

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26. B. Dalamagas - S.Kotsios

Personal Income Tax: Incentive Or Disincentive To Work Effort?

REVUE ECONOMIQUE, Volume 59, 4, July 2008, pp 777-812.

ABSTRACT This paper investigates the implications of an exogenous increase (decrease) in the income tax schedule for hours worked per employee and per self-employed in a general equilibrium model. The model is estimated for France, Italy, Spain and Portugal using the GMM estimation technique. Steady-state analysis and econometric estimates show that tax withholding provisions diversify the response of employees and the self-employed to adjustments in the direct tax system. Among the results is that, in the presence (absence) of tax withholding provisions, the labor supply curve may become downward (upward) sloping. Thus, the argument advanced by those who advocate the implementation of a strategy aiming at reducing taxes on labor in order to increase incentives to work need to be carefully reconsidered.

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27. George Athanasiou, Stelios Kotsios

An Algorithmic Approach To Exchange Rate Stabilization

Economic Modelling 25 (2008) 1246–1260.

ABSTRACT: In this paper we explore the effect of central bank interventions on the behavior of the exchange rate. In particular, we present two control algorithms, namely the 'Target Zone' and the 'Target Value', and we test their effectiveness in stabilizing the exchange rate. To this purpose, we use a chartist–fundamentalist model and we find that both algorithms reduce exchange rate variability significantly even in the presence of policy lags and dynamic noise.

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28. S.Kotsios

The Model Matching Problem For A Class Of Polynomial Non-Linear Discrete Input-Output Systems With Cross-Products. An Algorithmic Approach.

INTERNATIONAL JOURNAL OF CONTROL , Vol. 82, No. 4, April 2009, 620–642.

ABSTRACT In this paper we examine the model matching problem that concerns non-linear input–output discrete systems, containing products among delays of input and output signals, through a special factorisation. The algebraic framework of δ-operators and the star-product that we adopt describe these systems. Moreover, a certain procedure that resembles the Euclidean division allows us to discover the linear factors of those systems, with respect to the above mentioned operations. The entire approach is symbolically algorithmic and involves the use of suitable software.

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29. **P. E. Petrakis, S. Kotsios**

A Non Linear Control Model Of Growth, Risk And Structural Change

Intelligent Information Management, 2010, 2, 80-89
doi:10.4236/iim.2010.22010 Published Online February 2010
(http://www.scirp.org/journal/iim)

ABSTRACT: Uncertainty is perceived as the means of removing the obstacles to growth through the activation of Knig- htian entrepreneurship. A dynamic stochastic model of continuous-time growth is proposed and empirically tested, including equilibrating and creative entrepreneurial activity. We find that uncertainty affects economic growth and the rate of return, and causes structural changes in portfolio shares for the two types of entrepre-neurial events. Structural change depends mainly on the intertemporal rate of substitution, productivity ratios, and finally intersectoral difference in return and risk.

30. V. Dalamagas, S. Kotsios

A Macroeconomic Approach To The Income Tax-Work Effort Relationship

International Review of Applied Economics 2011, 1–18.

ABSTRACT: In this paper, we analyse the dynamic relationship between hours worked per employee (per self-employed) and marginal income tax-rate shocks in terms of both a comparative-dynamics model and a stochastic general equilibrium econometric model. The econometric model is estimated for Germany, UK and USA over the post-1960 period using the GMM estimation technique. Estimates in both models show that increases in the marginal income-tax rate exert negative effects on hours worked by both employees and the self-employed, but the response of the employees who are subject to tax withholding is stronger than the response of the self-employed.

31. S.Kotsios

A Symbolic Computational Algorithm For Designing Feedback Stabilizers Of Polynomial Nonlinear Systems

IMA Journal of Mathematical Control and Information, *Volume 28, Issue 4, December 2011, Pages 463–474, https://doi.org/10.1093/imamci/dnr016*

ABSTRACT: The aim of this paper is to present a symbolic computational algorithm that will allow us to deal with the feedback stabilization problem for continuous non-linear polynomial systems. The overall approach is based on a methodology that checks the positivity of a given polynomial.

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4. **Kotsios, S.** (2014). An algorithmic method for checking global asymptotic stability of nonlinear polynomial systems with parameters. *Applied Mathematics and Computation*.

32. S.Kotsios – D.Lappas

About Model Complexity Of 2-D Polynomial Discrete Systems. An Algebraic Approach

Volume: Applications of Mathematics and Informatics in Siences and Engineering, Springer Optimization and Its Applications, 2013.

ABSTRACT: By the means of special operators and operations, the so called D-operators and the star-product, a special algebraic description for Nonlinear Polynomial Discrete Systems in two dimensions is developed. By using this description we can check if these nonlinear systems are "similar" or "equivalent" with linear systems, in the sense that the evolution of both systems, under the same initial conditions, are related among each other. Different kind of solutions of the problem, seem to determine different degrees of complexity for the original nonlinear systems.

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1. **Kotsios, S., & Lappas, D. (2017).**The systems complexity problem for nonlinear polynomial discrete systems with many delays and two components: An algebraic approach. International Journal of Difference Equations ISSN 0973-6069, Volume 12, Number 1, pp. 55–106 (2017)

33. S.Kotsios

An Algorithmic Method For Checking Global Asymptotic Stability Of Nonlinear Polynomial Systems With Parameters

Applied Mathematics and Computation, Volume 240, 1 August 2014, Pages 358–367.

ABSTRACT: An algorithm is presented here, for checking the Global Asymptotic Stability of polynomial dynamical systems with parametric coefficients. It is based on the possibility of writing the polynomials, as sums of products of first degree polynomials, with artificial parametrical coefficients. By giving to all the parameters certain values, we ensure the positiveness of some quantities, constructing thereby proper Lyapunov functions, which guarantee the stability of the equilibrium point

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34. S.Kotsios,

Feedback Bounded Stabilization Of Certain Discrete Volterra Systems

International Journal of Control Volume 89, 2016 - Issue 6, 1214-1221.

ABSTRACT: Throughout this paper we present a method for designing feedback-laws which stabilize non-linear discrete Volterra systems. Our method is based on a factorization algorithm which decomposes the original system as a composition of a δ-polynomial and a linear series.

35.Ilias Kostarakos-Stelios Kotsios

Fiscal Policy In Greece In The Aftermath Of The Crisis: An Algorithmic Approach

Comput Econ (2017). doi:10.1007/s10614-017-9650-3

ABSTRACT: We present a framework for fiscal policy design that is based on algorithmic, linear feedback control methods. In particular, in the context of a linear, deterministic macro-model, we develop an algorithmic procedure which allows us to construct fiscal policy rules for government expenditures so that desired target-levels for GDP are exactly met (that is, complete tracking is achieved). In order to examine the effectiveness of our method we estimate a small macroeconometric model of the Greek economy and run some counterfactual policy experiments. These experiments indicate that, for the Greek economy in the beginning of the crisis in early 2010, expansionary fiscal policy is able to stimulate growth and reduce the debt-to-GDP ratio.

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8. **Ioannis Dassios , Mel T. Devine.** A macroeconomic mathematical model for the national income of a union of countries with interaction and trade. Journal of Economic Structures · February 2016 DOI: 10.1186/s40008-016-0049-4

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36. S. Kotsios-D. Lappas

The Systems Complexity Problem For Nonlinear Polynomial Discrete Systems With Many Delays And Two Components. An Algebraic Approach.

International Journal of Difference Equations ISSN 0973-6069, Volume 12, Number 1, pp. 55–106 (2017).

ABSTRACT: By the means of special operators and operations, the so called D-operators and the star-product, a special algebraic description for Nonlinear Polynomial Discrete Systems in two dimensions is developed. By using this description we can check if these nonlinear systems are " similar" or " equivalent" with linear systems, in the sense that the evolution of both systems, under the same initial conditions, are related among each other. Different kind of solutions of the problem, seem to determine different degrees of complexity for the original nonlinear systems. The whole approach has algebraic and algorithmic nature and no analytical tools are used.

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37.Ilias Kostarakos-Stelios Kotsios

Feedback Policy Rules For Government Spending: An Algorithmic Approach,

Economic Structures (2017) 6:5, p.8.

ABSTRACT: We present a framework for the design of fiscal policy rules that is based on algorithmic, linear feedback control methods. In particular, in the context of a linear, deterministic macro-model, we construct fiscal policy rules for government expenditures and taxation, using appropriate symbolic algorithms, so that desired levels for GDP and public debt are reached. We run a number of simulations in order to examine the effectiveness of our method and draw some policy conclusions.

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3. **A. Raffelini** "A Fiscal-Monetary Framework for the Era of Coexistence: Fiat and Cryptocurrency in National Reserve Strategies." ResearchGate preprint, 2025.
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Self-Citations

8. **V. Spyrakis, S. Kotsios** "Public Debt Dynamics: The Interaction with National Income and Fiscal Policy." *Journal of Economic Structures*, Springer, 2021. DOI: 10.1186/s40008-021-00238-4.
9. **V. Spyrakis, S. Kotsios** "Public Debt and Nonlinear Investment Function." ResearchGate preprint.
10. **S. Kotsios, I. Kostarakos** "Controlling National Income and Public Debt via Fiscal Policy. A Model Matching Algorithmic Approach." *Vestnik of Saint Petersburg University*, 2016.

38. Stelios Kotsios-Kostarakos Ilias.

Controlling National Income and Debt via Extra Taxation. A Model Matching Algorithmic Approach.

Vestnik of Saint Petersburg University. Series 10. Applied mathematics. Computer science. Control processes, 2016, issue 4, pp. 86–91.

Abstract: Our aim in this paper is to present an application of the exact model matching approach to a linear, discrete macroeconomic model with delays. The solution is based on algebraic methods and the development of appropriate symbolic algorithms that produce a class of feedback laws as a solution.

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Non-Self Citations

Self-Citations

1. **Ilias Kostarakos-Stelios Kotsios**, Feedback Policy Rules For Government Spending: An Algorithmic Approach, Economic Structures (2017) 6:5, p.8.

2. **Stelios Kotsios,** "Feedback Control Techniques for a Discrete Dynamic Macroeconomic Model with Extra Taxation: An Algebraic Algorithmic Approach" Mathematics*2023,* 11*(19), 4213;https://doi.org/10.3390/math11194213*

39. Stelios Kotsios – Evangelos Melas

Nonlinear Invariants Of Planar Point Clouds Transformed By Matrices

FACTA UNIVERSITATIS (NIS) Ser. Math. Inform. Vol. 33, No 5 (2018), 751–771, https://doi.org/10.22190/FUMI1805751K

ABSTRACT: The goal of this paper is to present invariants of planar point clouds, that is functions which take the same value before and after a linear transformation of a planar point cloud via a 2x2 invertible matrix. In the approach we adopt here, these invariants are functions of two variables derived from the least squares straight line of the planar point cloud under consideration. A linear transformation of a point cloud induces a nonlinear transformation of these variables. The said invariants are solutions to certain Partial Differential Equations, which are obtained by employing Lie theory. We find cloud invariants in the general case of a four$-$parameter transformation matrix, as well as, cloud invariants of various one-parameter sets of transformations which can be practically implemented. Case studies and simulations which verify our findings are also provided.

40. E. Camouzis – St. Kotsios.

Necessary and Sufficient Conditions for Debt Sustainability. True or a Paradox?

International Journal of Difference Equations ISSN 0973-6069, Volume 14, Number 2, pp. 91–113 (2019)

Abstract: We present necessary and sufficient conditions such that Public Debt, denoted by (B_n), is sustainable. The government budget constraint equation implies that: Issuing of new debt (B_{n+1}) plus current tax revenues (\tau_n Y_n) should balance out current government spending on goods and services (G_n) plus the cost of servicing current debt (r_n B_n), thus (B_{n+1} = (1 + r_n) B_n - \tau_n Y_n + G_n), (n = 0, 1, \ldots), where (r_n) and (\tau_n) are nominal interest rate and taxation rate, respectively, while ({Y_n}) is the nominal GDP sequence. Solutions of the budget constraint equation might as well be negative and this creates a disturbance in the study of the long time behavior of debt (B_n). We present a system of equations, which contains the budget constraint model as a special case. The two state variables are: Public Debt, (B_n), and savings, (F_n). The values of the solutions of the system are always nonnegative, and this allows for explicit computation of necessary and sufficient conditions for debt sustainability. We also provide several examples, by assuming that the values (Y_n) of nominal GDP satisfy the Samuelson–Hicks model [Y_{n+1} = b(1 + k) Y_n - b k Y_{n-1} + G, \quad n = 0, 1, \ldots,] where (b \in (0,1)) is the marginal propensity to consume and (k \in (0,\infty)) is the acceleration coefficient.

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1. **Mohamed Amine Kerker, Elbahi Hadidi, Abdelouahab Salmi, Nouressadat Touafek** "On the Asymptotic Behaviour of the Nonautonomous Difference Equation (y_{n+1}=\frac{\alpha_n+y_n}{\beta_n+y_{n-k}})." Journal of Difference Equations and Applications, June 2025.

Self-Citations

2. **41. E. Camouzis – St. Kotsios**. "May's Host–Parasitoid Geometric Series Model With A Variable Coefficient" Results in Applied Mathematics 11 (2021), https://doi.org/10.1016/j.rinam.2021.100160.

3. **E. Camouzis – St. Kotsios** A Rational System with a Variable Coefficient, Researchgate, 2021

41. E. Camouzis – St. Kotsios.

May's Host-Parasitoid Geometric Series Model With A Variable Coefficient

Results in Applied Mathematics 11 (2021), https://doi.org/10.1016/j.rinam.2021.100160.

Abstract: During the last fifteen years there has been a significant growth of mathematical and scientific interest related to the study of difference equations with variable coefficients. The reason might as well be that variable coefficients make several scientific models more realistic. The question, usually asked, is about the effect on the dynamics of a difference equation, after imposing variability on one or more of the coefficients of the equation. In this article, we investigate the boundedness and in some cases, the global behavior of solutions of a system of rational difference equations with a variable coefficient. If the coefficient is constant, then, up to an appropriate change of variables, the system that we study is the geometric series case of May's Host-Parasitoid Model.

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Public Debt Dynamics: The Interaction With National Income And Fiscal Policy

Journal of Economic Structures, 10*(1), 1-22*.

Abstract: The 2008 financial crisis triggered the debt crisis in Europe. High debt-to-GDP ratios made it impossible for some countries to apply countercyclical policy in order to overcome the recession. As a result, highly indebted countries were forced to apply austerity measures to avoid sovereign default, which deepened even further the decline of their GDP. We examine the case of a highly indebted country, which is not cut off from the financial markets yet, using a bilinear difference equation system. We contemplate the dynamic equations of national income and sovereign debt together, as GDP fluctuations directly affect the debt evolution and we introduce the notion of the second relation, namely the deceleration of private investments due to sovereign debt. We build a new method for the implementation of fiscal policy, a feedback control of the economic system, and we stress its consequent policy implications. We contribute to the existing debt dynamics literature providing a new perspective for the interaction of public debt and GDP. The fiscal policy method we propose vanishes the dilemma between the front-loaded and back-loaded austerity, combines the fiscal recovery from a recession and the fiscal consolidation, as it immediately improves the debt-to-GDP ratio by increasing the national income and restraining the rise of public debt. Finally, we stress why the second relation is important for the implementation of fiscal policy, as its presence leads to a slower and more painful recovery.

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18. **Kotsios, S.**, **& Spyrakis, V**. (2023).
Public debt nonlinear investment function. *(Preprint)*

43. **Spyridon D. Mourtas, Vasilios N. Katsikis, Emmanouil Drakonakis and Stelio Kotsios.**

Stabilization of Stochastic Exchange Rate Dynamics Under Central Bank Intervention Using Neuronets

International Journal of Information Technology & Decision Making, https://doi.org/10.1142/S0219622022500560, 2022

Abstract: The exchange rate dynamics affect national economies because fluctuations in currency prices distort their economic activity. To maintain an optimal exchange rate policy, these dynamics are crucial for countries with a trade economy. Due to the difficulty in predicting the participants behavior in some complex economic systems, which might throw the system into chaos, a novel stochastic exchange rate dynamics (SERD) model is introduced and investigated in this paper. Furthermore, a neural network approach is proposed and examined as a control chaos method to address the problem of stabilizing SERD through central bank interventions. Derived from power activation feed-forward neuronets, a 2-input weights-and-structure-determination-based neuronet (2I-WASDBN) model for controlling chaos in SERD under central bank intervention is presented in this paper. Six simulation experiments on stabilizing the chaotic behavior of the SERD model show that the 2I-WASDBN model outperforms other well-performing neural network models and that it is more effective than traditional methods for controlling chaos. By examining the volume of necessary intervention predicted by the 2I-WASDBN model, central banks can better comprehend exchange rate fluctuations and, in conjunction with their monetary policies, can make more precise decisions regarding the strategy of their interventions.

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13. **Drakonakis, E.**, & **Kotsios, S.** (2025). Stochastic exchange rate dynamics, intervention dynamics and the market efficiency hypothesis. *Computational Economics*. https://doi.org/10.1007/s10614-024-10581-w

45. Stelios Kotsios

Feedback Control Techniques for a Discrete Dynamic Macroeconomic Model with Extra Taxation: An Algebraic Algorithmic Approach

Mathematics2023, 11(19), 4213;https://doi.org/10.3390/math11194213

Abstract: In this paper, a model matching feedback law design technique is applied to a macroeconomical model. We calculate, using computational algebra methodology, which paths of government expenditure and extra taxation will lead the system to a desired dynamic behavior. The solution is based on algebraic methods and the development, in computer algebra software, of appropriate symbolic algorithms that produce a class of feedback laws as solutions. A method for solving a linear algebraic system of polynomials equations is provided, as well as its application to the feedback law design.

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46. Charalampos Anastasios Domenikos, Stelios Kotsios.

A Post Keynesian Model for Controlling GDP and Debt.

Review of Economics and Economic Methodology Movement for Economic Pluralism 2024, Vol. 7(1), 129.

Abstract. The Great Recessionary period that followed the 2008 crisis has severely impacted theEuropean Union's debt-to-GDP dynamics. Austerity measures, implemented in highlyindebted economies to restore fiscal credibility and promote long-term growth, failed tostimulate GDP and stabilize debt. The article offers a set of fiscal policy rules able to provideGDP growth and debt reduction using a linear, time-lagged, discrete macroeconomic post-Keynesian model. The algebraic methods with appropriate symbolic algorithms, through thefeedback control techniques developed below, allow us to find a path for the GDP and debtdesired targets to be met. Consequently, this study argues that expansionary fiscal policy canbe a powerful tool for stimulating the economy in association with specific tax regimes.

47. Emmanouil Drakonakis, Stelios Kotsios.

Stochastic Exchange Rate Dynamics, Intervention Dynamics and the Market Efficiency Hypothesis.

Computational Economics, https://doi.org/10.1007/s10614-024-10581-w, April 2024.

Abstract Since currency price fluctuations hinder economic activity, exchange rate dynamics have an effect on national economies. To have a proper exchange rate policy in place, these dynamics are essential for nations with a trade economy. This study presents and examines a distinctive stochastic dynamics exchange rate model (ESI) in order to address the challenges associated with predicting the behavior of participants in some complex economic systems, which might lead to the system's collapse. To address the issue of ESI stability by central bank interventions (managed currency) in a specified target value, a target value technique is also provided and tested. Last but not least, we examine the noise traders' role as a major source of market uncertainty as we look at the market efficiency hypothesis for the foreign exchange market (FX).

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48. Emilia Marsellou, Stelios Kotsios.

Consumer and Corporate Debt in a 3D Macroeconomic Model.

Mathematics 2025, 13, 1052. https://doi.org/10.3390/math13071052, March 2025.

Abstract We build on the literature of consumer debt–income inequality nexus, by developing a post-Keynesian model of growth and income distribution that incorporates both consumer and corporate borrowing. Specifically, we examine a non-linear dynamic system of three differential equations of workers' debt-to-capital ratio, corporate debt-to-capital ratio, and the accumulation rate. We conduct simulations to solve the system for the long-run equilibrium points and examine local stability using the Routh–Hurwitz conditions. Additionally, we conduct a comparative statics analysis and investigate the stability of the model using a measure of the maximum distance among the three equilibrium points. Our key findings suggest that although our model shares several quantitative and qualitative aspects with the 2 × 2 models, the inclusion of corporate debt alters the impact of parameter changes on macroeconomic stability. This incorporation increases the number of parameters that have differing effects on stability across various scenarios. The ratio of external-to-internal borrowing, along with the interest rate, is among the few parameters that consistently undermines macroeconomic stability across all scenarios.

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49. Stelios Kotsios.

Regional Model Matching and Stability of Discrete Billinear Systems. A Computational Algebra Approach.

INTERNATIONAL JOURNAL OF CONTROL
https://doi.org/10.1080/00207179.2025.2503308, April 2025.

Abstract The purpose of this paper is to study discrete bilinear input-output systems using algebraic methods in an algorithmic manner. A suitable operator and corresponding operations are employed to address the challenges of feedback linearisation and feedback stabilisation. Relevant algorithms are provided to enable the entire approach to be implemented using specialised software.

50. Spyrakis Vasilios, Kotsios Stelios,
Public Debt and nonlinear investment,
https://www.researchgate.net/publication/373689228_public_debt_nonlinear_investment_function , under reviewing Review of Economic Analysis

Abstract The Great Recession incurred a severe debt crisis in Europe. Research interest was shifted to debt sustainability and to the proper policy to overcome the problems of recession and high debt levels. Parallelly, an intellectual dispute begun about the debt overhang theories and the way that debt-to-GDP ratios affect income growth rates. The debate led researchers to investigate the existence of debt thresholds, after which debt's impact on growth changes sign and/or becomes insignificant, and also to examine the linear or non-linear relations between debt and income growth. By using panel data, we examine the existence of a relation between debt and investments, since debt influences income growth through the channel of investments. We add to the existing literature because a) we investigate the effect of debt upon investments for all levels of debt-to-GDP ratios, b) we distinguish the qualitative difference of the effects that the stock of debt and the debt-to-GDP ratio cause on investments, c) we introduce a non-linear functional form of the second relation and d) our analysis advocate the perspective that investments can be described by the estimated function. Our results indicate that there exist a strongly statistically significant relationship among investments, debt and debt-to-GDP ratio.

51.Domenikos C., & Kotsios S. (2025).

Adaptive Control in Post-Keynesian Economics: A new Approach to Fiscal Policy

(Under Reviewing, Metroeconomica)

Abstract. This paper develops a Post-Keynesian macroeconomic model for adaptive fiscal policy design using a novel Optimization-Based Adaptive Control (OBAC) methodology. The model addresses the dual policy challenge of promoting GDP growth while maintaining public debt within sustainable bounds. Drawing from the neo-Kaleckian tradition and recent advancements in dynamic macroeconomic modeling, the framework incorporates time-dependent behavioral parameters—specifically, the capitalist investment rate $k(t)$ and savings propensity $s(t)$ —which evolve endogenously in response to fiscal policy interventions. The OBAC methodology operates in discrete time and follows a two-stage process: first, it computes a feasible interval for government expenditure $G(t)$ that ensures output and debt remain within pre-defined tolerance bands; second, it adaptively estimates optimal values of $k(t+1)$ and $s(t+1)$ by minimizing a cumulative error function representing deviations from target trajectories. This closed-loop control structure captures the recursive feedback between policy actions and private-sector behavioral responses, offering a more realistic alternative to static-rule fiscal models. The result is a flexible, data-responsive policy framework that aligns with Post-Keynesian principles of demand-led growth, endogenous dynamics, and historical path dependence. By allowing fiscal instruments and economic parameters to co-evolve, the proposed model provides a robust basis for stabilizing macroeconomic outcomes under conditions of structural uncertainty.

52.Emmanouil Drakonakis, Stelios Kotsios .

Heuristic Stochastic Controller for Stabilizing Exchange Rate Dynamics Under Uncertainty

(It *has* been accepted for publication in Computational Economics.)

Abstract. In this paper, we develop the Stochatic Central Bank Exchange Rate Intervention (SCERI) model, based on two stochastic differential equations represented by two different Arithmetic Brownian Motions. The aim is to mathematically denote the noise from noise traders and the central bank interventios, which is a stochastic controller to assist effective policy decisions. To address SCERI's challenges, we propose time varying target zones and values in order to support central banks to limit uncertainty. While these interventions can increase stability in the process, they require calibration of the various bounds or they may create instability. Even though there are concerns about intervention risks, our model is certainly feasible to alleviate the complications of stabilizing the currency. The proposed heuristic stochastic controller operates under the influence of noise traders, market participants whose actions cause the random fluctuations. With the use of this model and algorithm, central banks have essential tools to stabilize exchange rate dynamics as the model allows the adjustment of intervention strategies to ounteract market uncertainty.

53. Emmanouil Drakonakis, Stelios Kotsios

Central Bank Interventions in Exchange Rate Dynamics and Covid-19 Shock.

Volume to the honor of Professor Stournaras, 163-173, 2025

Abstract. Exchange rate theory is a fundamental area of economics and finance that examines the factors influencing the relative value of one currency to another. This historical evolution of exchange rates is a complex and dynamic subject, involving the analysis of currency value fluctuations between different nations over time. In our work, we introduce and investigate a novel exchange rate dynamics model for the Covid-19 crisis (C19SE), where the decisions of market participants are modeled as noise through stochastic differential equations. Additionally, to prevent national economic collapse, we propose a Central Bank Stochastic Algorithm as an intervention strategy for central banks.

54.Ilias Kostarakos, Stelios Kotsios,

Almost Four Decades of Cohesion Policy: Some Empirical Evidence

Volume to the honor of Professor Stournaras, 261-281, 2025.

Abstract. This paper empirically assesses the impact of Cohesion policy expenditures on the economic performance of the EU's Member States covering a period of almost four decades.

We employ a novel dataset that includes the entire universe of Cohesion payments disbursed to the EU Member States. Based on this dataset, we first document some stylized facts for Cohesion policy, paying close attention to the case of Greece. We draw on recent developments from the panel time series econometrics literature and employ the so-called unobserved common factor framework for the estimation of the output effects of Cohesion policy. Our results indicate that Cohesion policy exerts a positive impact on economic performance, which is mainly manifested via the investment channel.

55.Domenikos C. & Kotsios S. (2025).

Modeling Fiscal Interventions in a Post-Keynesian Framework: A Model Simulation Approach.

Macroeconomic Models and the Greek Economy: Orthodox, Heterodox and Marxist Approaches, 311-327.

Abstract This paper develops a dynamic Post-Keynesian macroeconomic model to evaluate the effectiveness of alternative fiscal policy strategies in driving output growth, stabilizing public debt, and improving employment outcomes. Drawing on Post-Keynesian theory, the model emphasizes the central role of aggregate demand, the delayed response of investment to past behavior, and the endogenous nature of economic cycles. Five distinct fiscal scenarios are implemented—ranging from passive non-intervention to fully optimized control—simulating their performance within a discrete-time control-theoretic framework. Scenario A serves as a baseline with no fiscal stimulus, Scenarios B through D apply rule-based government spending paths with optimized intensity, while Scenario E utilizes a fully endogenized policy solution. All different cases are evaluated against target trajectories for GDP and public debt, allowing for a rigorous comparison of macroeconomic trade-offs. The results reveal that while rule-based fiscal strategies can support short-run growth, only a dynamically optimized fiscal path achieves both high employment and debt stabilization in the long run. These findings reaffirm the argument for active fiscal intervention and provide practical insights for designing growth-oriented, debt-conscious fiscal rules in demand-constrained economies.

PAPERS IN CONGRESSES

1. S. Kotsios – N. Kalouptsidis

THE MODEL MATCHING PROBLEM FOR A CERTAIN CLASS OF NONLINEAR SYSTEMS. Proceedings of the 30th Conference on Decision and Control Brighton, England 1991, pages 1809-1810.

ABSTRACT. In this paper sufficient conditions for the solution of the model matching problem and for a specific class of nonlinear systems, represented by the so-called δ-polynomials and linear desired models is described. An algorithm yielding causal controllers and a BIBO closed-loop connection is supplied.

2. S. Kotsios – N. Kalouptsidis

THE ADAPTIVE CONTROL FOR A CERTAIN CLASS OF NONLINEAR SYSTEMS. Proceedings of IEEE Mediterranean Symposium on new Directions in Control Theory and Applications, Crete 1993.

ABSTRACT: In this paper an Adaptive Controller based on model matching problem for a specific class of nonlinear systems, is developed.

3. S. Kotsios

A DESCRIPTION OF 2-D DISCRETE POLYNOMIALS NONLINEAR SYSTEMS. Proceedings of the second Greek Symposium on Nonlinear Systems, Fractals and Chaos, Xanthi 1994.

Abstract: A new algebraic method for the description of 2-D nonlinear polynomial discrete systems is developed via the so-called generalized mixed-operators.

4. S. Kotsios – Y. Bakopoulos

NONLINEAR DYNAMICS OF DISCRETE SYSTEMS WITH DISCONTINUITY. Proceedings of the third Greek symposium on Nonlinear Systems, Fractals and Chaos, Xanthi 1995.

Abstract: It presents and describes certain fractal structures appeared in nonlinear systems with discontinuities.

5. S. Kotsios A SYSTEM APPLICATION OF THE STAR-PRODUCT. Third European Control Conference, ECC95, 1995, Rome, Italy.

Abstract. In this paper the problem of finite input/output representation of a special class of nonlinear Volterra polynomial systems is studied via the notion of linear factorization of δ-series. Furthermore, for the solution of the problem an Euclidean type algorithm is used.

6. S. Kotsios – O. Feely

A CONTRIBUTION TO THE SYMBOLIC DYNAMICS OF THE DOUBLE ΣΔ-MODULATORS. The 4th Workshop on Nonlinear Dynamics of Electronic Systems, Seville, Spain, 1996.

ABSTRACT: In this paper a certain method is introduced for the study of the symbolic dynamics of double ΣΔ-modulators with variant input. Using mathematical tools we give a general procedure which we apply later to some certain examples

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1. **Y. Bakopoulos, N. Lygeros, A. Drigas** "Adaptive Encryption Protocols." *WSEAS Transactions on Communications*, Vol. 4, No. 8, pp. 694–700, 2005.

7. S. Kotsios

A FACTORIZATION OF NONLINEAR DISCRETE SYSTEMS AND ITS APPLICATIONS. 1o Congress on Systems and Signals of the Naval Academy, Pireus 1996.

Abstract: In this paper a new factorization of discrete systems is presented. This factorization is based on the star-product, an operation which corresponds to the cascade connection of systems.

8. S. Kotsios

SOME FACTORIZATIONS OF SPECIAL NONLINEAR DISCRETE SYSTEMS AND THEIR APPLICATIONS. Fourth European Control Conference, ECC97, 1997, Brussels, Belgium.

Abstract: In this paper a new factorization of discrete nonlinear systems is presented. This factorization is based on the star-product, an operation corresponding to the linear combination of systems. Finally, some applications to system analysis and feedback design are provided.

9. S. Kotsios

BIBO STABILITY OF SPECIAL NONLINEAR DISCRETE SYSTEMS. EURICSON 98, 1998, Athens, Greece.

Abstract: The BIBO stability of special nonlinear systems with discontinuities is examined via proper coefficients bounds.

10. Στ. Κώτσιος – Διον. Λάππας

CONTRIBUTION TO THE STUDY OF NONLINEAR DISCRETE SYSTEMS. 17th Congress of the Greek Mathematical Society, 2000, Athens.

Abstract: Nonlinear polynomial discrete systems with various delays are described through an algebraic framework.

11. P.E.Petrakis – S. Kotsios

«Growth, Entrepreneurship and Risk: The positive connection», Globalization and Entrepreneurship: Fears, Challenges and Opportunities Conference, *Croatia, (24 – 26 April 2003).*

Abstract: This article contributes towards the understanding of the relationship of growth, entrepreneurship and risk. The mean rate growth concept is influenced by the entrepreneurship level of the economy which is in turn influenced by the risk of the economy. The paper proposes the argument that we will understand better growth and entrepreneurship if we understand the way the risk affects them.

12. P.E.Petrakis – S. Kotsios

«Growth, Entrepreneurship and Risk», European Association for Research in Industrial Economics - Earie 2003 Conference, Helsinki, (24-26/8/2003)

Abstract: This article contributes towards the understanding of the relationship of growth, entrepreneurship and risk.

13. P.E.Petrakis – S. Kotsios

«The effects of Risk on Growth, Equilibrating and Creative entrepreneurial events», Metu International Conference in Economics VII, Ankara, Turkey, (5-7 August 2003).

Abstract: This paper is concerned with analyzing the effect of risk on growth and its components. Moreover, we assume that growth is the result of Equilibrating and Creative Entrepreneurial Events (eee and cee, respectively) and, we examine the way in which risk affects them.

14. St.Kotsios

FACTORIZATION AND BIBO STABILITY OF CERTAIN DISCRETE VOLTERRA SYSTEMS. 11th Mediterranean Conference on Control and Automation - MED'03- RHODES, GREECE, 2003.

Abstract: Throughout this paper we present some stability criterions for special non-linear discrete Volterra systems. Our method is based on a factorization algorithm which decomposes the original system as a star-product of δ-operator and a linear series. Then the stability of the linear series guarantees the stability of the original non-linear system too. An extension in the case of Volterra systems containing products among inputs and outputs as well as some open-loop stability techniques are also provided.

15.P.E.Petrakis – S. Kotsios
«The analysis of the relation of Growth, Entrepreneurship and Risk over Business Cycles», International Network for Economic Research (INFER) Annual Conference 2003- Determinants of Growth and Business Cycles: Theory, Empirical Evidence and Policy Implications, Giessen, Germany, (5-6 August 2003).

Abstract: This article contributes towards the understanding of the relationship of growth, entrepreneurship and risk over business cycle. The mean growth rate is influenced by the entrepreneurship level of the economy which in turn is influenced by the risk of the economy. The paper produces empirical evidence that the relations of growth, entrepreneurship and risk are well established as our theoretical postulations predict. Thus, the paper proposes the argument that we will understand how growth and entrepreneurship interact if we understand the way risk affects them.

16. P.E.Petrakis – S. Kotsios
«The analysis of the relation of Growth, Entrepreneurship and Risk», RENT XVII-Research in Entrepreneuship and Small Business Conference, Lodz, Poland, (20-21 November 2003).

Abstract: This article contributes towards the understanding of the relationship of growth, entrepreneurship and risk. The mean rate growth concept is influenced by the entrepreneurship level of the economy which is in turn influenced by the risk of the economy. The paper produces empirical evidence that the relations of growth, entrepreneurship and risk premium in the economy are well established as our theoretical

postulations predict. Thus the paper proposes the argument that we will understand better growth and entrepreneurship if we understand the way the risk affects them.

17. S.Kotsios

THE PROBLEM OF POSITIVE DEFINETENESS THROUGH A FORMAL FACTORIZATION OF POLYNOMIALS. HERCMA 2003, ATHENS.

Abstract: The purpose of this paper is to present a formal factorization of polynomials with several variables. Via this factorization we can write a concrete polynomial as a sum of products of linear-like polynomials with parametric coefficients plus a remainder. Evaluating those parameters in a proper way, we obtain the so-called Linear-Like Factorizations. Applications of those factorizations for checking the positive definiteness of a given polynomial is also included.

18. P.E.Petrakis – S. Kotsios

«Growth, Entrepreneurship and Uncertainty», 3rd International Symposium Economy 2004, Bulgaria, (14-17 September 2004)

19. I. Karafyllis – S. Kotsios.

CONDITIONS FOR GLOBAL ASYMPTOTIC STABILIZATION OF DISCRETE-TIME SYSTEM. NOLCOS2004, Munich.

Abstract: We give necessary and sufficient Lyapunov-like conditions for non-uniform in time stabilization of discrete-time systems. Particularly, it is proved that for a finite-dimensional discrete-time control system there exists a continuous stabilizing feedback if and only if there exists a Control Lyapunov Function. Moreover, methodologies for the construction of continuous feedback stabilizers are presented.

20. S.Kotsios (Chairman)

A MODEL MATCHING ALGORITHM FOR A CLASS OF NONLINEAR DISCRETE SYSTEMS. A SYMBOLIC APPROACH.

CDC-ECC 2005, Seville, SPAIN.

Abstract: A computational method for solving the model matching problem, for a class of nonlinear discrete systems, is presented in this paper. The whole methodology is based on an algebraic framework which permits the solution of the problem via the use of a long division operation.

CITED BY

Non-Self Citations

1. **Li P., Zhong S. M., Cui J. Z**. "Delay-Dependent Robust BIBO Stabilization of Uncertain System via LMI Approach." *Chaos, Solitons & Fractals*, Vol. 40, No. 2, pp. 1021–1028, April 2009.
2. **L. Ying Shang, Michael K. Sain** "Fixed Poles in the Model Matching Problem for Systems over Semirings." *Linear Algebra and its Applications*, Vol. 430, pp. 2368–2388, 2009.
3. **Ying Shang, Michael K. Sain** "Fixed Zeros in the Model Matching Problem for Systems over Semirings." *Linear Algebra and its Applications*, Vol. 434, pp. 18–43, 2011.
4. **Juri Belikov, Miroslav Halas, Ülle Kotta, Claude H. Moog** "Model Matching Problem for Discrete-Time Nonlinear Systems: Transfer Function Approach." *Proceedings of the 9th IEEE International Conference on Control and Automation (ICCA)*, Santiago, Chile, December 19–21, 2011.
5. **Juri Belikov, Miroslav Halas, Ülle Kotta, Claude H. Moog** "Model Matching Problem for Discrete-Time Nonlinear Systems." *Proceedings of the Estonian Academy of Sciences*, Vol. 64, No. 4, January 2015.

21. George Athanassiou , Iasson Karafyllis, Stelios Kotsios

"PRICE STABILIZATION USING BUFFER STOCKS'', 5th Conference on Research on Economic Theory and Econometrics Rethymnon, 10-13 July 2006.

ABSTRACT: The price stabilization problem is stated and solved for a nonlinear cobweb model with government stocks.

22. Stelios Kotsios

An Algorithm For Designing Feedback Stabilizers of Nonlinear Polynomial Systems Proceedings of the 15th Mediterranean Conference on Control and Automation, July 27-29, 2007,

Athens, Greece.

Abstract: The aim of this paper is to present a symbolic computational algorithm that will allow us to deal with the feedback stabilization problem for continuous nonlinear polynomial systems. The overall approach is based on a methodology that checks the positivity of a given polynomial.

CITED BY

Non-Self Citations

1. **Corrado Possieri, Antonio Tornambè** "On Polynomial Vector Fields Having a Given Affine Variety as Attractive and Invariant Set: Application to Robotics." International Journal of Control, Vol. 88, No. 5, pp. 1–25, January 2015.

23. Stelios Kotsios

THE LINEAR FACTORS OF NONLINEAR DISCRETE SYSTEMS WITH CROSS-PRODUCTS AND THEIR APPLICATION TO THE MODEL MATCHING PROBLEM. Proceedings of the European Control Conference 2007 Kos, Greece, July 2-5, 2007

Abstract: In this paper we examine the model matching problem that concerns a general class of nonlinear input-output discrete systems containing products among input and output signals. The algebraic framework of δ-operators allows us to discover all the linear factors of those systems with respect to the operations of star-product and dot-product. The entire approach is algorithmic and involves the use of suitable software.

24. Hassan Ugail, Akshai Aggarwal, Yannis Bakopoulos, Stelios Kotsios

Description of 3D Morphology using the Concept of the Divider Set CyberWorlds 2008 , September 2008.

Abstract: We describe a novel concept for classification of complex 3-dimensional geometry based on a concept we refer to as the Divider Set. It is a novel alternative concept to maximal disks, Voronoi sets and cut loci,

which is based on a formal definition relating to topology and differential geometry. In this paper we introduce the concept of the Divider Set within the context of definition morphology of objects. We then discuss the computation the Divider Set for complex 3-dimentional geometry. In particular, in this paper, we have shown how the Divider Set can be computed for surfaces described in parametric form. In order to computer the Divider Set, two forms of solutions have been described, one analytic which takes advantage of the special parametric form of the surface and the other a numerical solution which can be utilised for general parametric surfaces. In order to show the applicability of the techniques we illustrate our concepts through a number of examples.

CITED BY

Non-Self Citations

1. **Akshai Aggarwal, Yannis Bakopoulos, George Vossinakis, Agamemnon Giannakopoulos, Leonidas Theodorou** "Complexity in Skeletonization on a Discrete Lattice." *WSEAS Transactions on Communications*, Vol. 4, No. 8, pp. 694–700, 2005.

25. Ugail H, Aggarwal A, Bakopoulos Y and Kotsios S. "The Divider Set of Explicit Parametric Geometry", Cyberworlds 2008, IEEE Computer Society ISBN: 978 0 7695 3381 0, pp. 232-239.

Abstract: In this paper we describe a novel concept for classification of complex parametric geometry based on the concept of the Divider Set. The Divider Set is an alternative concept to maximal disks, Voronoi sets and cut loci. The Divider Set is based on a formal definition relating to topology and differential geometry. In this paper firstly we discuss the formal definition of the Divider Set for complex 3-dimensional geometry. This is then followed by the introduction of a computationally feasible algorithm for computing the Divider Set for geometry which can be defined in explicit parametric form. Thus, an explicit solution form taking advantage of the special form of the parametric geometry is presented. We also show how the Divider Set can be computed for various complex parametric geometry by means of illustrating our concept through a number of examples.

26. S.Kotsios, D.Pissas Effectiveness of the Cutoff Audit Rule and Inequality of Income 1o National Congress on Applied Mathematics and Operational Research, Athens 2011.

Abstract: Previous analysis in the theory of tax compliance has shown that the implementation of the cut-off audit rule produces vertical inequality in the tax system and constitutes more unequal the distribution of income in the economy. However, the ability of the cut-off audit rule to raise the government's tax revenue is affected by the distribution of income, since the cut-off audit policy targets at specific income groups. In this context, the question that arises is how the change in the inequality of income affects the effectiveness of the cut-off audit rule. On this account, the present study reveals that in a lognormal economy, the growth of the inequality of income increases the effectiveness of the cut-off audit rule, despite the fact that the extent of tax evasion in the economy increases. Consequently, the effectiveness of the cut-off audit rule is supplied by the implementation of the cut-off audit rule in the economy.

27. Stelios Kotsios, Dionyssios Lappas "Linear Similarity of Nonlinear Polynomial Discrete Systems. An Algebraic Approach." Conference of Modern Mathematical Methods in Science and Technology (M3ST), 2012-08-26 at Kalamata, Greece.

Abstract: By the means of special operators and operations, the so called δ and δε-operators and the star-product, a special algebraic description for Nonlinear Polynomial Discrete Systems is developed. This framework, permits the description of polynomial discrete systems with many delays by means of many variables polynomials with respect to the above operators. The star-product corresponds to the composition of polynomial functions, in other words to the substitution of one polynomial into another. This operation is compatible with the cascade connection of one system with another. By using this description we can check if these nonlinear systems are "similar" or "equivalent" with linear systems, in the sense that the evolution of both systems, under the same initial conditions, are related among each other. This is achievable by the existence of δε-series that is series of δε-operators, which transform the

"output" of the one nonlinear system to the "output" of the linear system. Different kind of solutions of the problem, seem to determine different degrees of complexity for the original nonlinear systems. For instance, if the transformation series is a series of series or not, this assigns a special degree of complexity to the original system. The whole method is algebraic in nature and special algorithms have been developed for the several calculations.

28. Ilias Kostarakos-Stelios Kotsios, "LINEAR FEEDBACK METHODS AND PUBLIC DEBT" presented at 6th PhD Conference in Economics 2013, 16-17 September 2013, Athens, Greece.

ABSTRACT: In this paper we construct linear feedback policy rules for government expenditures so that (fixed) policy targets for GDP and public debt are exactly met.

29. Ilias Kostarakos-Stelios Kotsios, "CONTROLLING PUBLIC DEBT WITHIN A LINEAR FEEDBACK FRAMEWORK: AN ALGORITHMIC APPROACH", accepted at 1st Hellenic Open Business Administration International Conference, 8-9 March 2014, Athens, Greece.

ABSTRACT: Our aim in this paper is to utilize the linear feedback framework in order to design appropriate fiscal policy rules. In particular, we utilize a solution method known as "model matching" which will provide us with the feedback rules necessary to exactly match the (fixed) policy targets. We are going to use two policy instruments: government expenditures (G) and a form of taxation (E) that has a non-permanent, emergency character. The intuition behind this type of taxation is the property tax imposed on Greek households as part of the Adjustment Program. The policy targets will be the levels of GDP and public debt. The solution method is fully parameterized and the relevant solution algorithms are developed. It is important to note that a family of feedback laws emerges as a solution to the policy problem. We run a series of

simulation experiments in order to examine the outcomes of different policy scenarios and the effectiveness of the proposed policies.

30. Stelios Kotsios, "FEEDBACK BOUNDED STABILIZATION OF CERTAIN DISCRETE VOLTERRA SYSTEMS", ICINCO 2014, 1-3 September, Vienna, Austria.(Chairman)

ABSTRACT: Throughout this paper we present a stability criterion for special non-linear discrete Volterra systems. Our method is based on a factorization algorithm which decomposes the original system as a star-product (composition) of a δ-polynomial and a linear series. Then the '' nice '' behaviour of this linear series guarantees the stability of the original non-linear system too. Based on this approach a feedback-law is also designed, which produces closed-loop discrete Volterra systems with bounded outputs.

CITED BY

Non-Self Citations

1. **Athanasios G. Lazaropoulos, Panagiotis Lazaropoulos** "Financially Stimulating Local Economies by Exploiting Communities' Microgrids: Power Trading and Hybrid Techno-Economic (HTE) Model." Trends in Renewable Energy, Open Access, ISSN: 2376-2144.

31. Ilias Kostarakos-Stelios Kotsios, "Fiscal Policy, Linear Feedback Control and Debt Stabilization", 1st International Conference in Economics and Business, Hellenic Open University, 6-7 February 2015, Athens, Greece.

32. Ilias Kostarakos-Stelios Kotsios, "Fiscal Policy by using Linear Feedback–Laws for Debt Stabilizing", 1st AMEF Conference, 6-7 April 2015, Thessaloniki, Greece.

33. Ilias Kostarakos-Stelios Kotsios, "An Algorithmic Linear Feedback Approach to the Design of Fiscal Policy: The Cases of Greece and Cyprus", 7th Biennial PhD Symposium on Contemporary Greece and Cyprus, London School of Economics (LSE), 4-5 June 2015, London, UK.

34. Ilias Kostarakos-Stelios Kotsios, "Controlling National Debt Dynamics A First Approach", Workshop on"Complex Systems: Modelling, Emergence and Control " City University on 18th, 19th June 2015, London, UK.

35. Ilias Kostarakos-Stelios Kotsios, "FISCAL POLICY, LINEAR FEEDBACK CONTROL AND DEBT STABILIZATION VIA LINEAR FEEDBACK CONTROL", 3rd International PhD Meeting of Thessaloniki in Economics 2015, 19-20 June, 2015, UoM, Thessaloniki, Greece.

36. V. Spyrakis-St. Kotsios, "Public Debt Dynamics: The Interaction with National Income" 14th Biennial Athenian Policy Forum (APF) Conference hosted by the University of Piraeus, July 6-8, 2018.

37. Charalampos-Anastasios Domenikos, Stelios Kotsios, " Controlling GDP and Debt with a Post-Keynesian model ", International Conference on Business & Economics , HELLENIC OPEN UNIVERSITY, Athens, Greece, MAY 7-8, 2021.

38. Charalampos-Anastasios Domenikos, Stelios Kotsios. "Controlling GDP and debt with a Post-Keynesian model. "International Conference on Business and Economics of the Hellenic Open University, 7-8/5/2021 .

39. Charalampos-Anastasios Domenikos, Stelios Kotsios. "A Kaleckian model for Controlling GDP and debt" 6-8/7/2022 24th conference of Association of Heterodox Economics (AHE) at SOAS University, London. Frederic S. Lee Prize" for the best paper by an early career researcher.

40. Emmanouil Drakonakis, Stelios Kotsios, "Stabilization of Stochastic Exchange Rate Dynamics Under Central Bank Intervention Between Covid-19", University of Thessaly, Covid Conference. 2022

41. Emmanouil Drakonakis, Stelios Kotsios, "Stochastic Exchange Rate Dynamics, Intervention Dynamics and the Market Efficiency Hypothesis or Stabilization of Stochastic Exchange Rate Dynamics Under Central Bank Intervention Using Neuronets", 19th Summer School Risk Finance and Stochastics RFS-2022, Athens University of Economics and

Business. 2022.

42. Charalampos-Anastasios Domenikos, Stelios Kotsios,” A New Kaleckian model for Controlling GDP and debt”, 7-9/9/2022 34th conference of European Association for Evolutionary Political Economy (EAEPE), Naples.

B.4. PAPERS UNDER REVIEWING

1. **Dimitris Pissas – St. Kotsios. An application of Grey Relational Analysis on the Theory of Optimal Random Audit Policy,** ***June 2013***

1	Melike Taşcı- Çiğdem ÖZARI	OECD ÜLKELERİNİN EKONOMİK ÖZGÜRLÜK GÖSTERGELERİNİN K-ORTALAMALAR KÜMELEME YÖNTEMİ VE GRİ İLİŞKİSEL YÖNTEMİ İLE ANALİZİ	Jan 2019

2. **Ilias Kostarakos-Stelios Kotsios, “A Computational Approach to Fiscal Policy Design” Under Reviewing at COMPUTATIONAL ECONOMICS.**

B.5. WORKING PAPERS

1. Akshai Aggarwal, Yannis Bakopoulos, Stelios Kotsios

SKELETONS OF DISCRETE CELL SETS PART I: The Divider of two points

ABSTRACT: A new concept in the area of morphology is introduced. It is called the Divider of a set of cells on a lattice. It is a generalization of the thinning and skeletonization concepts. It is defined for any set of discrete pixels comprising a figure or image on a lattice.

It can be used in most applications where skeletons or Voronoi sets are utilized, having specific advantages over the traditional results due to its rigorous mathematical definition. A set of rules for the construction of this innovative form of skeleton are presented, based on a mathematical description of the construction process. The definition is given with an eye to specific applications, such as robotic navigation or OCR, among others. In Part I of this manuscript, the Divider of two arbitrary cells is defined and a solution for a suitable construction algorithm is given.

2. St. Kotsios and N. Kalouptsidis
ADAPTIVE CONTROL FOR A CERTAIN CLASS OF NONLINEAR DISCRETE SYSTEMS

Abstract: In this paper an adaptive controller algorithm based on the model matching problem for a specific class of nonlinear discrete systems, is developed. A stability and an example are also provided.

CITATIONS

1) Zhong-Ping Jiang, Yuan Wang: ***" Input-to-state stability for discrete-time nonlinear systems"***, Automatica 37 (2001) 857-869.

3.St. Kotsios "THE FORMAL LINEAR LIKE FACTORIZATION OF MULTIVARIABLE POLYNOMIALS AND ITS APPLICATIONS."

3. **Ilias Kostarakos-Stelios Kotsios, "Fiscal Policy in the Presence of Time-Varying Parameters".**

4. ***Spyrakis, Kotsios, 2022, Public debt and nonlinear investment functio, working.***

5. **Emmanouil Drakonakis, Stelios Kotsios, Stochastic Exchange Rate Dynamics, Intervention Dynamics and the Market Efficiency Hypothesis, working.**

6. **Adaptive control techniques for GDP growth, Authors: Charalampos Domenikos and Stelios Kotsios.**

7. Discovering Linear Solutions for Nonlinear Polynomial Difference Equations. **Stelios Kotsios.**

8. An Algebraic Geometry Method for solving Implicit Polynomial Difference Equations. **Stelios Kotsios.**

B.6. ARTICLES IN GREEK

1. Στ. Κώστιος – Κοσκολός Τάσος
ΔΙΑΦΟΡΙΚΕΣ ΕΞΙΣΩΣΕΙΣ ΧΩΡΙΣ ΜΟΝΟΣΗΜΑΝΤΟ. Μαθηματική Επιθεώρηση της ΕΜΕ, τεύχος 34, σελίδες 39-55.

Στη μονογραφία αυτή παρουσιάζεται μια εισαγωγή στην θεωρία των διαφορικών εξισώσεων χωρίς μονοσήμαντο. Δίνονται οι σχετικοί ορισμοί και αποδεικνύεται το περίφημο θεώρημα Kneser.

2. Στ. Κώτσιος
ΜΕΤΑΦΡΑΣΕΙΣ ΑΡΘΡΩΝ. Μαθηματική Επιθεώρηση της ΕΜΕ.

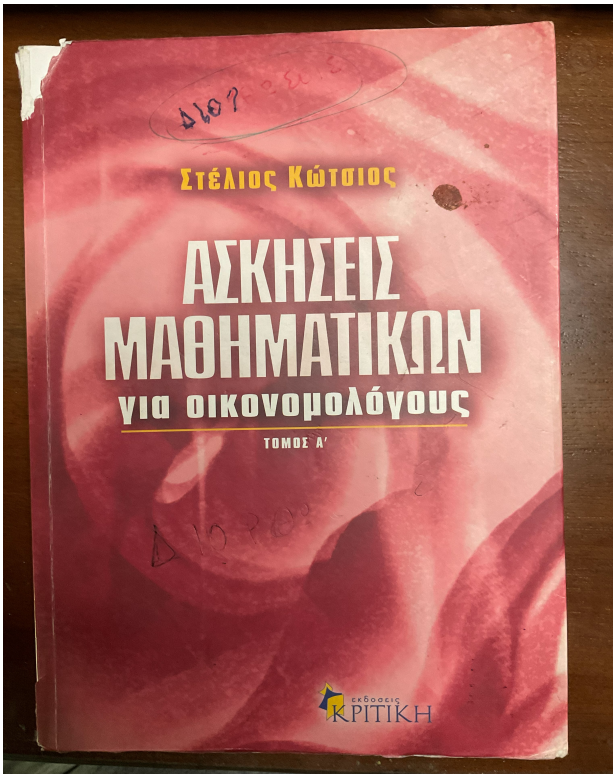
- *«Οι μαθηματικές τεχνικές στην εργασία του Fermat πάνω στο νόμο της διάθλασης». Τεύχος 32, σελίδες 9-19.*
- *«Η επιστροφή του θεωρήματος JORDAN». Τεύχος 32, σελίδες 24-51.*
- *«Η μηχανική της ανθρώπινης κίνησης». Τεύχος 34, σελίδες 8-29.*

3.Στ.Κώτσιος
ΣΗΜΕΙΩΣΕΙΣ ΠΟΣΟΤΙΚΩΝ ΜΕΘΟΔΩΝ ΣΤΗΝ ΑΝΑΛΥΣΗ ΕΠΙΧΕΙΡΗΣΕΩΝ.
Πρόκειται για σημειώσεις ποσοτικών τεχνικών που χρησιμοποιούνται στο πρόγραμμα e-learning: BUSINESS ANALYTICS του Πανεπιστημίου Αθηνών. (2012), σελίδες 240.

B.7. BOOKS AND NOTES IN GREEK

1. Στ. Κώτσιου
ΑΣΚΗΣΕΙΣ ΓΕΝΙΚΩΝ ΜΑΘΗΜΑΤΙΚΩΝ ΓΙΑ ΟΙΚΟΝΟΜΟΛΟΓΟΥΣ.
Τόμος Ι, Έκδοση Β, Εκδόσεις ΚΡΙΤΙΚΗ, (2013), σελίδες 495.

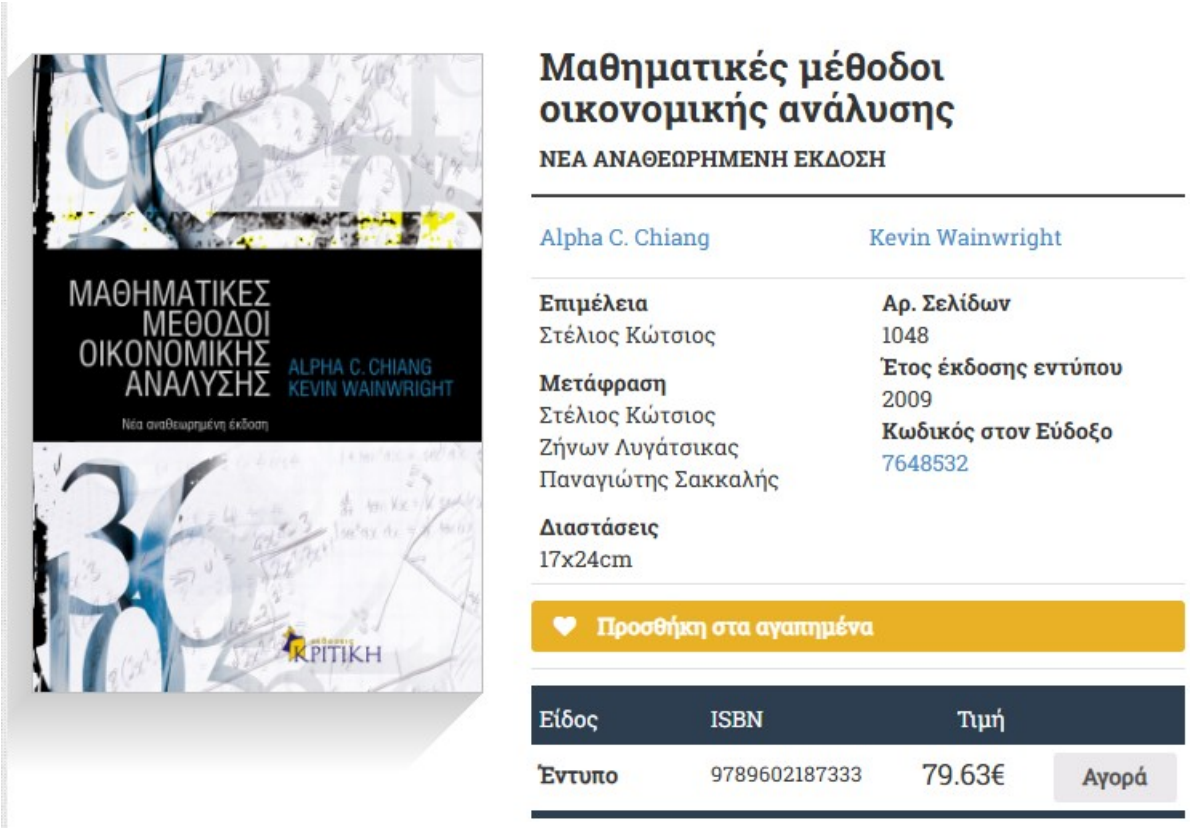
Πρόκειται για ασκήσεις μαθηματικής ανάλυσης για οικονομολόγους, οι οποίες χρησιμοποιούνται στη διδασκαλία του αντίστοιχου μαθήματος στο Οικονομικό Τμήμα του Πανεπιστημίου Αθηνών.



2.Σημειώσεις Μαθηματικών II
ΕΚΠΑ- Τμήμα Οικονομικών Επιστημών
Στέλιος Κώτσιος - Γιώργος Αθανασίου

3.Σημειώσεις Mathematica
ΕΚΠΑ- Τμήμα Οικονομικών Επιστημών
Στέλιος Κώτσιος - Γιώργος Αθανασίου

4. Μαθηματικές μέθοδοι οικονομικής ανάλυσης **Wainwright Kevin**, **Chiang Alpha C.** Μεταφραστής: **Λυγάτσικας, Ζήνων** **Κώτσιος, Στέλιος** Επιμελητής: **Κώτσιος, Στέλιος** Εκδότης: **Κριτική(2012)**



Ένα κλασικό εγχειρίδιο με πολλές επεξηγήσεις και συγκεκριμένα παραδείγματα. Ο τρόπος παρουσίασης που υιοθετείται είναι εσκεμμένα μη φορμαλιστικός και «φιλικός στο χρήστη».Οι συγγραφείς προσπαθούν να προβλέψουν τις απορίες των φοιτητών στη διάρκεια της μελέτης. Τα μαθηματικά εργαλεία εμπλουτίζονται σταδιακά, διευκολύνοντας την κατανόηση. Όπου χρειάζεται, επεξηγηματικά γραφήματα ενισχύουν οπτικά τα αλγεβρικά αποτελέσματα. Στους παραπάνω λόγους οφείλεται η πρωτοφανής διεθνής επιτυχία αυτής της ολοκληρωμένης εισαγωγής στα μαθηματικά που χρησιμοποιούν οι οικονομολόγοι σε όλα ανεξαιρέτως τα πεδία της ανάλυσής τους. Το βιβλίο καλύπτει τις παρακάτω κατηγορίες οικονομικής ανάλυσης:

- Στατική (ανάλυση ισορροπίας).
- Συγκριτική στατική.
- Προβλήματα βελτιστοποίησης (ως μια ειδική κατηγορία της στατικής).
- Δυναμική ανάλυση.
- Δυναμική βελτιστοποίηση.

Στις επικαιροποιήσεις της νέας έκδοσης περιλαμβάνονται:

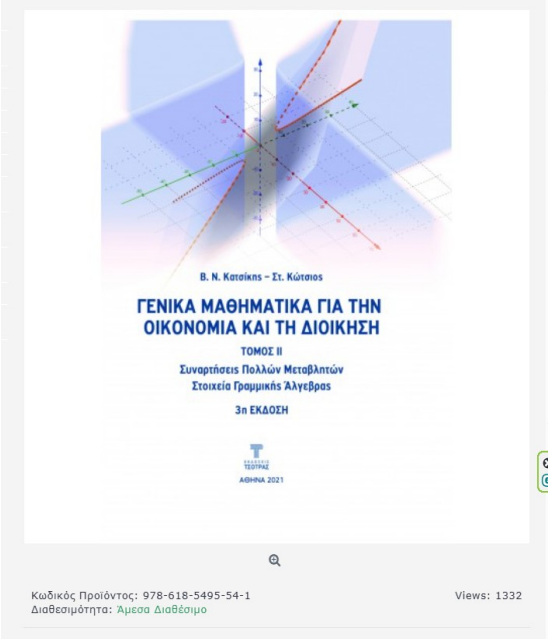
- Εμπλουτισμός της ύλης με νέες οικονομικές εφαρμογές.
- Ένα καινούργιο κεφάλαιο για τη θεωρία βέλτιστου ελέγχου.
- Αναθεωρημένες ασκήσεις και προβλήματα για μεγαλύτερη εξοικείωση του φοιτητή με τη θεωρία.

Ένα εξαιρετικά παιδαγωγικό εργαλείο που χρησιμοποιείται ευρέως σε οικονομικές σχολές σε όλο τον κόσμο.

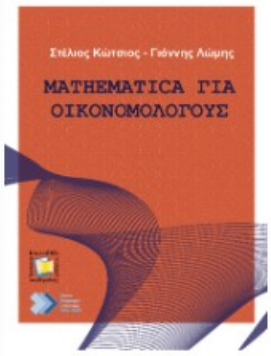
5. Στ. Κώτσιος. ΓΕΝΙΚΑ ΜΑΘΗΜΑΤΙΚΑ ΓΙΑ ΟΙΚΟΝΟΜΟΛΟΓΟΥΣ. Εκδόσεις Κριτική (2021), σελίδες 542.

Με πολλές ασκήσεις και πλούσιο υλικό, το βιβλίο στοχεύει να βοηθήσει τους φοιτητές στην κατανόηση και την εμπέδωση των βασικών μαθηματικών εννοιών. Καλύπτει τον κλασικό απειροστικό λογισμό, διατρέχοντας την ύλη των Μαθηματικών Ι, όπως αυτά διδάσκονται σε ένα οικονομικό τμήμα και πρέπει να τα γνωρίζουν οι οικονομολόγοι. Ως εκ τούτου, τα παραδείγματα και οι εφαρμογές αντλούνται από τα οικονομικά, χωρίς όμως να γίνονται εκπτώσεις στις καθαρά μαθηματικές γνώσεις που είναι απαραίτητες για την αντιμετώπισή τους. Σε πολλά κεφάλαια παρατίθενται βασικές γνώσεις, ενώ σε αρκετά τμήματα του βιβλίου αναπτύσσονται εργαλεία τα οποία χρησιμοποιούνται ευρέως στα οικονομικά. Πολλές από τις ασκήσεις που περιλαμβάνονται στο σύγγραμμα είναι κλασικές ασκήσεις μαθηματικής ανάλυσης και σε αρκετές υπάρχει μια οικονομική «ενδυμασία». Αυτό αποσκοπεί σε μια πρώτη στοιχειώδη επαφή του φοιτητή με το «οικονομικό λεκτικό περιβάλλον». Δεδομένου ότι σκοπός του συγγραφέα είναι η διδασκαλία των μαθηματικών και όχι της οικονομικής θεωρίας, το κύριο βάρος έχει δοθεί στο μαθηματικό κομμάτι των ασκήσεων οικονομικού περιεχομένου και όχι στην οικονομική τους διερμήνευση. Οι λύσεις που δίδονται σε διάφορες ασκήσεις είναι σε συνοπτική μορφή και μπορούν να θεωρηθούν μάλλον ως υποδείξεις. Ο φοιτητής καλείται να αποφύγει την αποστήθιση και να αυτενεργήσει καλύπτοντας μόνος του τα διάφορα (υπολογιστικά συνήθως) κενά.

6.Β. Κατσίκης – Στ. Κώτσιος. ΓΕΝΙΚΑ ΜΑΘΗΜΑΤΙΚΑ ΓΙΑ ΤΗΝ ΟΙΚΟΝΟΜΙΑ ΚΑΙ ΤΗΝ ΔΙΟΙΚΗΣΗ, ΤΟΜΟΣ ΙΙ. Εκδόσεις Τσιότρας, (2022), 3η Έκδοση, σελίδες 600.



6. **Στ.Κώτσιος – Ι.Λώμης. ΜΑΤΗΕΜΑΤΙCA ΓΙΑ ΟΙΚΟΝΟΜΟΛΟΓΟΥΣ, (2023), Κάλλιπος, σελίδες 275.**



Mathematica για οικονομολόγους

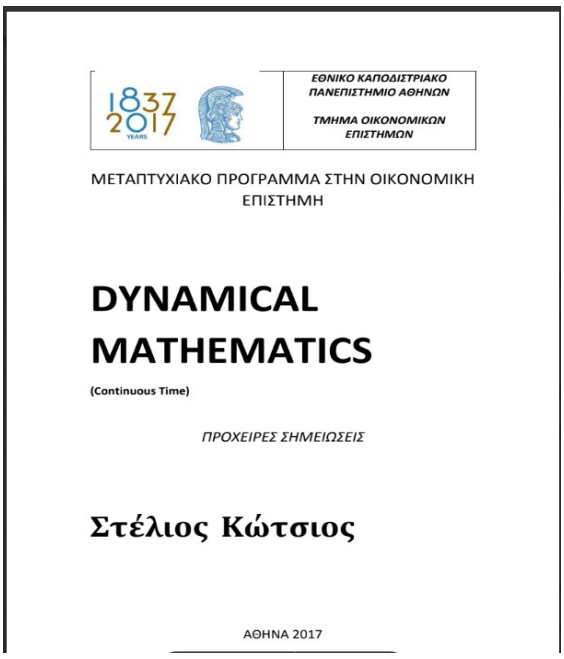
Άλλος τίτλος: Mathematica for economists

Συγγραφείς: *Κώτσιος, Στέλιος; ; Λώμης, Ιωάννης*

Τύπος: Μεταπτυχιακό εγχειρίδιο

Το βιβλίο εστιάζεται στη χρήση του Mathematica και της γλώσσας Wolfram για οικονομικές εφαρμογές. Δεν γράφτηκε ως εγχειρίδιο χρήσης του Mathematica, αλλά στοχεύει στην εισαγωγή των αναγνωστών στις απαραίτητες έννοιες που χρειάζονται για να ξεκινήσουν να δουλεύουν σε οικονομικές εφαρμογές, ακόμη και αν δεν έχουν προηγούμενη εμπειρία προγραμματισμού. Θα φανεί χρήσιμο σε οικονομολόγους και φοιτητές οικονομικών που θέλουν να επιτύχουν γρήγορα αποτελέσματα με το Mathematica και να αποκτήσουν βασική εξοικείωση με αυτό. Η προσέγγιση που ακολουθείται βασίζεται στις ιστορικά παλαιότερες και πιο συντηρητικές εντολές και χρήσεις της γλώσσας, αν και έχουν υπάρξει εξελίξεις στην πληροφορική, καθώς και συνεχής επέκταση των διαθέσιμων εντολών. Για παράδειγμα, το Mathematica μπορεί πλέον να ερμηνεύει εντολές σε φυσική γλώσσα και έχει πρόσβαση σε πολυάριθμες βάσεις δεδομένων σε όλα τα επιστημονικά πεδία, και μπορεί να ενσωματώνει τεχνολογίες τεχνητής νοημοσύνης αιχμής. Αν και ενθαρρύνεται η χρήση αυτών των προηγμένων χαρακτηριστικών, έχει μεγάλη σημασία η κατανόηση των βασικών αρχών προγραμματισμού και της δομής της γλώσσας πριν κάποιος εξερευνήσει τα πιο προηγμένα χαρακτηριστικά της. Το περιεχόμενο του βιβλίου χωρίζεται σε τρία μέρη. Στο πρώτο μέρος, το Mathematica παρουσιάζεται ως ένα ισχυρό εργαλείο που μπορεί να αντιμετωπίσει από απλές αριθμητικές πράξεις έως σύνθετα μαθηματικά προβλήματα, χρησιμοποιώντας συμβολικές και αριθμητικές μεθόδους, καθώς και να σχεδιάσει γραφικές παραστάσεις. Το δεύτερο μέρος ασχολείται με τη χρήση της γλώσσας Wolfram ως γενικού σκοπού γλώσσας προγραμματισμού, με έμφαση στα διάφορα προγραμματιστικά παραδείγματα που υποστηρίζει. Αυτό το μέρος δεν απαιτεί προηγούμενη γνώση προγραμματισμού, αλλά απαιτεί κάποια γνώση οικονομικής θεωρίας και μαθηματικών. Στο τρίτο μέρος, οι δεξιότητες που καλλιεργήθηκαν στα πρώτα δύο μέρη χρησιμοποιούνται σε μια σειρά από εφαρμογές στις οικονομικές επιστήμες, στα υπολογιστικά μαθηματικά και στα οικονομικά μαθηματικά.

S Kotsios. DYNAMICAL MATHEMATICS. Teaching notes, first draft.



SECTION C

BASIC INFORMATION

At a glance

Name	**KOTSIOS Stelios**
Position	**Professor,** **Department of Economics,** **Division of Mathematicsand Computer Science,** **National and Kapodistrian University of Athens,**

	Greece
Specialization	**Applied Mathematics, Control Theory**
Research interest	**Nonlinear Control and Dynamics**
Active years	**Since 1993**
Papers	**76 (40 Journals + 36 Congresses)**
Citations (by others)	**145**

C.1.PERSONAL INFORMATION

Identity Elements

Surname:	KOTSIOS
Name:	**STYLIANOS or STELIOS**
Father's name:	**ALFONSOS**
Mother's name:	**ANASTASIA**
Date of birth:	**20 / 04 /1960**
Place of birth:	**ATHENS**
Nationality:	**GREEK**
Marriage situation:	**MARRIED - 3 CHILDREN**
Basic studies:	**MATHEMATICIAN**
Foreign languages:	**ENGLISH (very well), GERMAN (fairly)**

Addresses

Work	**Home**
UNIVERSITY OF ATHENS, DEPARTMENT OF ECONOMICS, DIVISION OF MATHEMATICS AND COMPUTER SCIENCE, SOFOKLEOUS 1, 10559 ATHENS, GREECE Tel: 00302103689874 Fax: 00302103228538 e-mail: skotsios@econ.uoa.gr	GRIVA 17-19, HALANDRI 15233, ATHENS, GREECE Tel: 00302106894328 Mobile: 6932690203

Current Professional Position

I am PROFESSOR at the University of Athens, Department of Economics, Division of Mathematics and Computer Science.

Basic Studies

Year	Degree
1983	Bachelor Degree - University of Athens, Department of Mathematics.
1986	Master Degree. - Operational Research and Computer Science, University of Athens
1993	PhD - Department of Informatics, University of Athens

C.2. PREVIOUS PROFESSIONAL POSITIONS

- Military Academy of Greece**, Greece. (1983-1994), Lecturer of Advanced Mathematics.**
- Department of Informatics, University of Athe**ns, Greece. (1989-1993), teaching assistant in Control Theory and Applied Mathematics.**
- Ministry of Public Education, Athens**, Greece. (1993-1994) Instructor of Probability Theory and Computer Science at the Special Division, where the future teachers of high-schools are trained after their graduation.**
- University College Dublin**, Ireland. (1994-1996), Human Capital Fellowship at the Engineering Department, on the field of Dynamical Behaviour of Special Control Systems.**
- National Technical University of Athens**, Greece. (1996-1997), Research Fellow at the Mathematical Department, on the field of Discrete Control Systems with Discontinuities.**
- MIS-Foundation Centre, Athens**, Greece. (1996-1998), Teacher of Mathematics to students who intended to follow engineering studies in English universities.**
- Technological Education Institute (TEI) of Athens**, Greece. (1997-1998), Lecturer of Mathematics.**
- University of Thessaly, Department of Civil Engineering, Volos**, Greece. (1997-1998), Part-time Associate Professor at the field of Advanced Calculus and Differential Equations.**
- The University of Peloponnesus, Department of Computer Science, Tripoli, **Greece. (2002 – 2003), Visiting Professor at the fields of Advanced Calculus and Linear Algebra.**
- The Open University of Greece, Patra, **Greece. (2002 – 2017), Instructor at the fields of Advanced Calculus Linear Algebra and Quantitative Methods.**
- University of Athens, Department of Economics, Athens**, Greece. (1998 – 2014), Lecturer, Assistant Professor (since 2003) , Associate Professor (since 2010) and Professor (since 2016) on the fields of Advanced Calculus, Linear Algebra, Differential Equations, Dynamical Economics and Computational Mathematics.**

C.3. SEVERAL SCIENTIFIC ACTIVITIES

Editor – Reviewer

- Since 1987 until 1990, I participated in the editorial board and the secretarial office of the Mathematical Review Magazine of the Greek Mathematical Society.

- I have reviewed several papers for the following journals:

Applied Mathematics E- Notes (Full paper)
Asian Journal of Control (Full Paper)
Automatica (Full paper)
Economic Modeling (Full paper)
European Journal of Control (Full papers)
IEEE Transactions on Automatic Control (Full papers)
IEEE Transactions on Automatic Control (Short paper)
IMA, Journal of Information and Control (Full papers)
International Journal of Control (Full Papers)
International Journal of Mathematics (Full paper)
International Journal of Systems Science (Full Paper)
ITB Journal of Engineering Science (Full Paper)
Journal of Mathematical Systems Estimation and Control (Full paper)
Journal of Reviews on Global Economics.
Nonlinear Dynamics (Full Papers)
Numerical Algorithms.(Full Paper)
SIAM, Journal of Optimization and Control (Full paper)
Transactions of the Institute of Measurement and Control (Full Paper)
Journal of Applied Mathematics and Computation.
Mathematical Review Magazine (Short paper)

- I have reviewed papers for the following congresses:

52nd IEEE Conference on Decision and Control, Firenze, Italy, December, 2013
2012 ACC
2013 American Control Conference, Washington, DC, USA
24th Chinese Control and Decison Conference, Taiyuan, China 2012. (2012CCDC)
26th Chinese Control and Decison Conference, Changsha, China 2014.
30th Conference on Decision and Control
31st Chinese Control Conference, China 2012.

33rd International Conference on Current Trends in Theory and Practice of Computer Science, January 2007, Harrachov, Czech Republic. (SOFSEM07)
53rd IEEE Conference on Decision and Control, Los Angeles, California, USA, December 15-17, 2014
CDC-ECC11, to be held at Orlando, FL, USA during December 12-15, 2011
European Control Conference 2001
European Control Conference, 2005.
European Control Conference, 2007
IASTED 2012
ICCA11
IFAC 2002, 15th World Congress, Barcelona, Spain
IFAC World Congress, July 1996
IFAC WC 2017
CDC 16

PhD and MSc supervision

NAME OF THE CANDIDATE	POSITION	YEAR	TITLE OF THE THESIS	CATEGORY
Dr. Marsellou Emily	MAIN SUPERVISOR	2018	Models of private debt and fiscal stability	PhD
Dr. Athanasiou George	MAIN SUPERVISOR	2008	"Applications of Control Theory to the Study of Economical Systems"	PhD
Dr. Kostarakos Ilias	MAIN SUPERVISOR	2017	"Applications of Control theory to Fiscal Policy"	PhD
Dr. Stamatakis John	SECONDARY SUPERVISOR	2004	"Economics of Education: Issues on Growth".	PhD
Dr. Patokos Anastasios	SECONDARY SUPERVISOR	2007	"Economic Agent's Rationality and its evolution"	PhD
Mr. Koliofotis Vaios	MAIN SUPERVISOR	2003	Continuous Time Stochastic Optimal Control Methods and Economical Growth	MSc
Mrs. Kaila Dimitra	MAIN SUPERVISOR	2002	Study of environmental policies by means of optimal control methods	MSc

List of research Projects in which I have participated the last years

Title	Host Organization	Budget	Source	My Role	Dates
Efficient Algorithms for Systems Identification – Research Grant	University of Athens		Funded by the Greek Ministry of Industry Research and Technology.	Simple Researcher	1989
Nonlinear Control and ΣΔ-Modulators Institutional Fellowship – Research Grant	University College Dublin	150000 Irish Pounds	Human Capital and Mobility	Main Fellow	1994-1995
Nonlinear Control – Research Grant	National Technical University	18000000 Drachmas	Return Grant-Training and Mobility of Researchers	Main Fellow	1996-1997
Systems with Discontinuity – Research Grant	University of Athens	700.000 Drachmas	Internal Grant of University of Athens	Coordinator	1999-2000
Nonlinear Control Systems in Economy – Research Grant	University of Athens	700.000 Drachmas	Internal Grant of University of Athens	Coordinator	2000-2001
Optimal Control in Economy – Research Grant	University of Athens	2000 Euro	Internal Grant of University of Athens	Coordinator	2002-2003
Nonlinear Control Techniques in Economy – Research Grant	University of Athens	2000 Euro	Internal Grant of University of Athens	Coordinator	2004-2005
Secondary School Students Mobilization-Consultant Grant	University of Athens –Ministry of Education	6000000 Euro	ESPA-European Union	Senior Fellow	2008-2009
Nonlinear Control Techniques and Dynamics of the National Debt – Research Grant	University of Athens	8000 Euro	Internal Grant of University of Athens	Coordinator	2012
Nonlinear Control Techniques and Dynamics of the National Debt – Part B Research Grant	University of Athens	5000 Euro	Internal Grant of University of Athens	Coordinator	2013

Seminars – Summer Schools - Visits

- On November 1994, I gave a seminar at Birmingham University, invited by Prof.Norton. The title was: «The Model Matching Problem and BIBO Stability Criteria for a Certain Class of Nonlinear Systems ".

- On May 1997, I gave a seminar at Aegean University, Samos-Greece, invited by Prof. Hatzisavas. The title was: «Contribution to the study of the Nonlinear Discrete Control Systems".

- I attended the following summer schools as invited speaker.

- The second summer school on Nonlinear Analysis, Samos, Greece, 1994.
- The third summer school on Nonlinear Analysis, Samos, Greece, 1995.

- I was responsible for the visit of **Prof. Prasolov** from Saint Petersburg University, Russia. He stayed in our university during September and October 2008, for scientific discussions and presentations

SECTION D

STATEMENTS

D.1. Statement of research (a brief analysis)

My research project lies in the range of Dynamic Mathematics and focuses specifically on the area of Mathematical Control Theory. The problems that concern me are: stability, feedback design, chaotic behavior in the presence of discontinuities and finally, application of non-linear discrete systems to economics or engineering.
The tools I use are mainly arising from computational algebra, analysis and topology. The latter help me to give theoretical results, whilst the first for constructing symbolic algorithms proper for designing feedback-laws.

Specifically,

Papers 1,3,6,22, of my CV, are studying the dynamics of nonlinear discrete systems with input and the dynamics of continuous systems without uniqueness using topological and analytical tools. Concretely, I study the properties of the attainable set. This is the set of all possible states a system can be reached at a specific time instant. For these systems, I give properties concerning the so-called limit sets and theorems which guarantee their stability by means of Lyapunov functions.
Papers 9,17 and 18 are devoted to the study of non-linear discrete systems with two state sequences (2D), and delays of any degree of delays. Cross-products, ie product of different lags between the two sequences are also allowed. I develop a specific algebraic description, through the so-called δε-operators and the star-product, an operation which corresponds to the map composition. With the help of these tools I prove some stability theorems. Also, by using techniques that are an extension of the methods of differential algebra of Ritt, I construct algorithms for the design of appropriate feedback-laws for control problems.
Papers 4,5,8,10,14,15,24 and 28 constitute the bulk of my research interests. They study non-linear discrete input-output systems. These systems are either in polynomial form or in Volterra series form. They solve completely model-matching problems, BIBO stability problems and equivalency problems. The methods, which are followed, are based on the algebraic concepts of δ-operators and the star-product. Symbolic algorithms are developed, like those of algebraic geometry, whilst differentiation is nowhere used.
Papers 11,12,13,16 study the dynamics of nonlinear systems with input and discontinuity. This is the ΣΔ-converters. I I find theorems that describe the complexity of the dynamic behavior of these systems and also I define specific inputs that drive these systems to desired behavior.
Papers 20,21,25,26,27,29,30 are related either to the mathematical support of economic issues such as 21, 26 or to the application of nonlinear discrete control theory methods to economic models. Some economic variables are considered as inputs and special feedback-laws , which here are named policies, are designed to achieve certain goals.

The papers 7,19,23 concern the application of the previous methods of nonlinear dynamics in physics, differential equations and difference equations.
Finally, paper 31 is devoted to the feedback design of continuous polynomial nonlinear systems by means of algebraic geometry techniques.

Future Directions

For the future, I plan my work to follow the next axes:
1) An attempt to merge the methods of algebraic geometry, of symbolic computational algebra and of nonlinear dynamics. Specifically, when working with polynomial systems, then many notions, like the limits sets, the attainable sets, the Lyapunov functions, etc. can be calculated, studied with appropriate algebraic geometry and computational methods.
2) A complete study of the dynamics of discrete systems with topological or other tools that were used until now in continuous systems.
3) The study of systems with discontinuities, by generalizing appropriately classical results of nonlinear dynamics.

4) Application of modern methods of nonlinear control theory to economic dynamics, trying to design new policies with the help of old or modern non-linear models.

D.2. Statement of Teaching Philosophy

I have taught for almost 25 years a great amount of classical and basic mathematical subjects. All these years I taught maths, I follow the basic idea that students need to understand why they need maths. What problem exactly they solve and what are their advantages, by using mathematics, comparing with other approaches. Always, I begin my teaching by presenting the concrete problem that concerns me. A practical problem, arising usually, from physics, economics, or engineering. After that, I develop the tools needed for modelling that problem and then the tools needed for the solution. I indicate what had been done before and what are the necessary extensions for approaching the new issue or for solving an old problem with new methods. I show the points at which there are obscures and therefore where rigorous theorems are needed, ensuring therefore accurate solutions. So, I can present advanced theorems in a natural way. Not as something abstract and formal but as something necessary for the complete solution without controversy. Finally, the original problem is solved and extensions, limitations and future directions are also described. Moreover, I devote enough part of my teaching time, exploring the algorithmic solutions of the problem, if any. I analyse the computational complexity of the problem and the advantages we shall have from a possible " on – line" solution, as well as the difficulties we shall meet if we want to achieve that. I also use simulations, in order to help my students to develop a near to reality sense of science. For me, mathematics is a tool, a great tool, for describing and solving problems coming from other branches of science and the common everyday life and so I teach them.