CV

Stelios KOTSIOS

Στέλιος Κώτσιος

Section A: Βασικές Πληροφορίες στα Ελληνικά
Section B: Papers
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SECTION B

<u>ΒΑΣΙΚΕΣ ΠΛΗΡΟΦΟΡΙΕΣ</u>

Α. 1. ΠΡΟΣΩΠΙΚΕΣ ΠΛΗΡΟΦΟΡΙΕΣ

Επίθετο: **ΚΩΤΣΙΟΣ**

Όνομα: **ΣΤΥΛΙΑΝΟΣ**

Όνομα Πατρός: **ΑΛΦΟΝΣΟΣ**

Όνομα Μητρός: **ΑΝΑΣΤΑΣΙΑ**

Όνομα Συζύγου: **ΚΩΝΣΤΑΝΤΙΝΑ**

<u>Επικοινωνία</u>

<u>Διεύθυνση Κατοικίας:</u>

ΓΡΙΒΑ 17-19

ΧΑΛΑΝΔΡΙ 152 33,

ΑΘΗΝΑ

<u>Διεύθυνση Εργασίας:</u>

ΕΘΝΙΚΟ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ ,

ΣΧΟΛΗ ΟΙΚΟΝΟΜΙΚΩΝ και ΠΟΛΙΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ

ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ

ΣΟΦΟΚΛΕΟΥΣ 1, ΑΘΗΝΑ 105 59

<u>Τηλέφωνα</u>

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

Κινητό**: 6932690203**   Τηλεομοιοτυπία**: 210 3228538, 210 6813630**

Ηλ. – Ταχυδρομείο: **skotsios@econ.uoa.gr**

Προσωπικές πληροφορίες

Ημερομηνία γέννησης: **20 / 04 / 1960**

Τόπος γέννησης: **ΑΘΗΝΑ**

Εθνικότητα: **ΕΛΛΗΝΙΚΗ**

Αριθμός Αστ. Ταυτότητας: **ΑΜ046379**

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)**

Τρέχουσα Θέση Εργασίας

ΚΑΘΗΓΗΤΗΣ

ΕΘΝΙΚΟ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ΣΧΟΛΗ ΟΙΚΟΝΟΜΙΚΩΝ ΚΑΙ ΠΟΛΙΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ
ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΣΤΗΜΩΝ
ΤΟΜΕΑΣ ΜΑΘΗΜΑΤΙΚΩΝ-ΠΛΗΡΟΦΟΡΙΚΗΣ

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**

ΣΠΟΥΔΕΣ

- Απεφοίτησα από το Γυμνάσιο Αρρένων Βύρωνος το 1978 και το ίδιο έτος εισήλθα στο Μαθηματικό Τμήμα του Πανεπιστημίου Αθηνών από το οποίο πήρα πτυχίο την 19/04/1983 με βαθμό "Λίαν Καλώς" (7,2).

- Τον Σεπτέμβριο του ιδίου χρόνου έγινα δεκτός, λόγω υψηλής βαθμολογίας στο Μεταπτυχιακό Τμήμα Πληροφορικής και Επιχειρησιακής Έρευνας του Πανεπιστημίου Αθηνών, από το οποίο απεφοίτησα την 19/09/1986 με τον βαθμό "Καλώς" (6).

- Από τις αρχές του 1987, ερχόμενος σε επαφή με τον καθηγητή κ. Καλουπτσίδη Νίκο (Τμήμα Πληροφορικής), άρχισα να εργάζομαι μαζί του για την εκπόνηση διδακτορικής διατριβής με θέμα: "Μη Γραμμικά Συστήματα: Πρόβλημα Συναρμογής, BIBO Ευστάθεια και Προσαρμοστικός Έλεγχος" πάνω στην Μαθηματική θεωρία Συστημάτων Ελέγχου. Η συνεργασία αυτή κατέληξε στην απόκτηση διδακτορικού διπλώματος από το Τμήμα Πληροφορικής του Πανεπιστημίου Αθηνών την 09/06/1993 με βαθμό "Άριστα".

Υποτροφίες

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

Α. 2. ΕΠΑΓΓΕΛΜΑΤΙΚΗ ΠΡΟΫΠΗΡΕΣΙΑ

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	Πανεπιστήμιο Αθηνών – Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής.
1999-00	1.Πανεπιστήμιο Αθηνών – Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής
	2.Πανεπιστήμιο Αθηνών – Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.
	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ)	Καθηγητής Μαθηματικών για Μηχανικούς.
2000-01	1.Πανεπιστήμιο Αθηνών – Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής
	2.Πανεπιστήμιο Αθηνών – Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.
	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ)	Καθηγητής Μαθηματικών για Μηχανικούς.
2001-02	1.Πανεπιστήμιο Αθηνών – Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής
	2.Πανεπιστήμιο Αθηνών – Πρόγραμμα Σπουδών Επιλογής.	Διδάσκων Πληροφορικής.
	3.Σχολή Τεχνολογικών Εφαρμογών Αξιωματικών Μηχανικού. (ΣΤΕΑΜΧ).	Καθηγητής Μαθηματικών για Μηχανικούς.
	4.Πανεπιστήμιο Αθηνών Οικονομικό Πανεπιστήμιο – Διατμηματικό Διδακτορικό Πρόγραμμα Σπουδών.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2002-03	1. Πανεπιστήμιο Αθηνών – Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Λέκτορας, Τομέα Μαθηματικών Πληροφορικής
	2. Πανεπιστήμιο Αθηνών – 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.Πανεπιστήμιο Αθηνών – 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.Πανεπιστήμιο Αθηνών – Πρόγραμμα e-learning.	Υπεύθυνος του προγράμματος e-learning Πληροφορικής.
	5.Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.	Διδασκαλία σε Μαθήματα Διδακτορικού.
2004-05	1.Πανεπιστήμιο Αθηνών – Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Επίκουρος Καθηγητής, Τομέα Μαθηματικών Πληροφορικής

	2.Πανεπιστήμιο Αθηνών – 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. Πανεπιστήμιο Αθηνών – Πρόγραμμα e-learning.	Υπεύθυνος του προγράμματος e-learning Πληροφορικής.
	6.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος*.	*Διδασκαλία σε Μαθήματα Διδακτορικού.*
2005-06	1.Πανεπιστήμιο Αθηνών – Τμήμα Οικονομικών Επιστημών.	ΔΕΠ– Επίκουρος Καθηγητής, Τομέα Μαθηματικών Πληροφορικής
	2.Πανεπιστήμιο Αθηνών – 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. Πανεπιστήμιο Αθηνών – Πρόγραμμα e-learning.	Υπεύθυνος του προγράμματος e-learning Πληροφορικής.
	6.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος*.	*Διδασκαλία σε Μαθήματα Διδακτορικού.*
2006-07	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος*.	*Διδασκαλία σε Μαθήματα Διδακτορικού.*
2007-08	1.Πανεπιστήμιο Αθηνών – 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.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος*.	*Διδασκαλία σε Μαθήματα Διδακτορικού.*
2009-10	1.Πανεπιστήμιο Αθηνών – 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.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.*	Διδασκαλία σε Μαθήματα Διδακτορικού.
2011-12	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2012-13	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2013-14	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.*	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2014-15	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.*	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού

2015-16	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος*.	*Διδασκαλία σε Μαθήματα Διδακτορικού.*
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας*	*Διδασκαλία σε Μαθήματα του Μεταπτυχιακού*
	6.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΔΔΟΜΟ*	*Διδασκαλία σε Μαθήματα του Μεταπτυχιακού*
2016-17	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος*.	*Διδασκαλία σε Μαθήματα Διδακτορικού.*
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας*	*Διδασκαλία σε Μαθήματα του Μεταπτυχιακού*
	6.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΔΔΟΜΟ*	*Διδασκαλία σε Μαθήματα του Μεταπτυχιακού*
2017-18	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος*.	*Διδασκαλία σε Μαθήματα Διδακτορικού.*
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας*	*Διδασκαλία σε Μαθήματα του Μεταπτυχιακού* (ΜΧΑΚ-Business Analytics)
	6.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΔΔΟΜΟ*	*Διδασκαλία σε Μαθήματα του Μεταπτυχιακού*
2018-19	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος*.	*Διδασκαλία σε Μαθήματα Διδακτορικού.*
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ*	*Διδασκαλία σε Μαθήματα του Μεταπτυχιακού*
	6.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΑΝΑΛΥΣΗΣ ΔΕΔΟΜΕΝΩΝ ΚΑΙ ΔΙΟΙΚΗΣΗΣ*	*Διδασκαλία σε Μαθήματα του Μεταπτυχιακού*

	7.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2019-20	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Πρόγραμμα Διδακτορικών Σπουδών Οικονομικού Τμήματος.*	Διδασκαλία σε Μαθήματα Διδακτορικού.
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΑΝΑΛΥΣΗΣ ΔΕΔΟΜΕΝΩΝ ΚΑΙ ΔΙΟΙΚΗΣΗΣ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	8.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΣΤΡΑΤΗΓΙΚΟΥ MANAGEMENT*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	9.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2020-21	1.Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
2021-22	1.*Πανεπιστήμιο Αθηνών – 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.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.*Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ*	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού

2022-23	1.Πανεπιστήμιο Αθηνών – 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.Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Οικονομικής Επιστήμης	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	5.Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΜΑΘΗΜΑΤΙΚΗΣ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗΣ ΚΑΙ ΑΝΑΛΥΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	6.Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΔΙΑΧΕΙΡΙΣΗΣ ΚΙΝΔΥΝΟΥ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού
	7.Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα ΠΟΛΙΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ	Διδασκαλία σε Μαθήματα του Μεταπτυχιακού

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	25	
Πρόγραμμα Σπουδών Επιλογής	5	
ΣΤΕΑΜΧ	24	25
Πανεπιστήμιο Πελοποννήσου	1	
Ελληνικό Ανοικτό Πανεπιστήμιο	21	
ΣΥΝΟΛΟ		36

ΣΥΝΟΠΤΙΚΟΣ ΠΙΝΑΚΑΣ ΜΕΤΑΠΤΥΧΙΑΚΗΣ ΠΡΟΫΠΗΡΕΣΙΑΣ ΣΕ ΑΕΙ

ΘΕΣΗ	ΕΤΗ	ΣΥΜΨΗΦΙΣΜΟΣ ΕΤΩΝ
Πανεπιστήμιο Αθηνών.	13	13

Διδακτορικό Μεταπτυχιακό Πρόγραμμα Οικονομικού Τμήματος		
Πανεπιστήμιο Αθηνών – Μεταπτυχιακό Πρόγραμμα Εφαρμοσμένης Οικονομίας	9	2
Πανεπιστήμιο Αθηνών- Άλλα Μεταπτυχιακά	5	2
ΣΥΝΟΛΟ		**17**

Α. 3. 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-Monte Carlo
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.

Α. 4. ΑΛΛΕΣ ΕΠΙΣΤΗΜΟΝΙΚΕΣ ΔΡΑΣΤΗΡΙΟΤΗΤΕΣ

Διδακτορικά Διπλώματα

Επίβλεψη Διδακτορικών

Έχω επιβλέψει την εκπόνηση των κάτωθι διδακτορικών διατριβών:

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

o «Εφαρμογές της θεωρίας ελέγχου στο σχεδιασμό δημοσιονομικής πολιτικής» που εκπονήθηκε στο Οικονομικό Τμήμα του Πανεπιστημίου Αθηνών από τον κ. Ηλία Κωσταράκο. Τριμελής επιτροπή: Κώτσιος, Χορταρέας, Λεβεντίδης. (Ιούνιος 2017)

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

Έχω συμμετάσχει στις τριμελείς επιτροπές των κάτωθι διδακτορικών που εκπονήθηκαν στο Οικονομικό Τμήμα του Πανεπιστημίου Αθηνών.

- 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)

Επιβλέπω τις κάτωθι διδακτορικές διατριβές:

ΣΠΥΡΑΚΗΣ ΒΑΣΙΛΕΙΟΣ	The Income-Debt Dynamics in a Samuelson-Hicks Model	ΚΩΤΣΙΟΣ ΣΤ.	ΛΕΒΕΝΤΙΔΗΣ Ι.	ΠΑΠΑΝΔΡΕΟΥ Α.	06/04/2016
ΔΟΜΕΝΙΚΟΣ ΧΑΡΑΛΑΜΠΟΣ-ΑΝΑΣΤΑΣΙΟΣ	Έλεγχος ΑΕΠ και χρέους μέσω Kaleckian δυναμικών υποδειγμάτων	ΚΩΤΣΙΟΣ ΣΤ.	ΑΡΓΕΙΤΗΣ Γ.	ΔΟΤΣΗΣ Γ.	13/11/2019
ΔΡΑΚΩΝΑΚΗΣ ΕΜΜΑΝΟΥΗΛ	*Υπολογισμός Συναλλαγματικών Ισοτιμιών μέσω Διακριτών Στοχαστικών Συστημάτων και Αλγορίθμων*	*ΚΩΤΣΙΟΣ ΣΤ.*	*ΔΟΤΣΗΣ Γ.*	*ΜΠΑΣΙΑΚΟΣ Ι.*	*22/07/2020*
Μορφης Αθανάσιος	*Διακριτά Δυναμικά Υποδείγματα Προσφοράς Ζήτησης*	*ΚΩΤΣΙΟΣ ΣΤ*	*ΛΕΒΕΝΤΙΔΗΣ Ι.*	*ΚΟΥΡΑΝΤΗ ΦΡΑΓΚΩ*	*15/11/2022*

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 Παν/μιο)	31/10/2018
ΠΑΠΑΓΓΕΛΗΣ ΛΟΥΚΑΣ	Variance Risk	ΔΟΤΣΗΣ Γ.	ΚΑΙΝΟΥΡΓΙΟΣ	ΚΩΤΣΙΟΣ ΣΤ.	27/03/2019

	Premium, CPT and Asset Returns			Δ.	
[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*
[ΠΑΠΑΓΓΕΛΗΣ ΛΟΥΚΑΣ](#)	*Variance Risk Premium, CPT and Asset Returns*	*ΔΟΤΣΗΣ Γ.*	*ΚΑΙΝΟΥΡΓΙΟΣ Δ.*	*ΚΩΤΣΙΟΣ ΣΤ.*	*27/03/2019*
[ΤΟΤΟΜΗΣ ΚΩΝΣΤΑΝΤΙΝΟΣ](#)	*The explanatory power of CEOs and BODs characteristics on firms' Payout policy decisions in countries such as UK, Portugal & Spain*	ΗΡΕΙΩΤΗΣ Ν. (Καθηγητής ΔΕΟ ΕΚΠΑ)	*ΚΩΤΣΙΟΣ ΣΤ.*	*ΜΠΑΣΙΑΚΟΣ Ι.*	*13/11/2019*

Μεταπτυχιακά Διπλώματα

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

- Δήμητρα Καΐλα "Μελέτη Ενεργειακών Πολιτικών με Τεχνικές Βέλτιστου Ελέγχου". Πανεπιστήμιο Αθηνών, Μεταπτυχιακό Εφηρμοσμένης Οικονομίας.(2002)
- Βάϊος Κολιοφώτης, « Στοχαστικός Βέλτιστος Έλεγχος σε Συνεχή Χρόνο και Θεωρία Οικονομικής Μεγέθυνσης». Πανεπιστήμιο Αθηνών, Μεταπτυχιακό Εφηρμοσμένης Οικονομίας. (2003)
- Πάρις Τσάμπρας, «Λογισμικό για Δυναμικό Προγραμματισμό». Πανεπιστήμιο Αθηνών, Μεταπτυχιακό Εφηρμοσμένης Οικονομίας. (2017).
- Μανώλης Δρακωνάκης, «Στοχαστικά Επιτόκια», Πανεπιστήμιο Αθηνών, Μεταπτυχιακό Εφηρμοσμένης Οικονομίας. (2019)
- Μηταφίδης-Βλαχάκης Κωνσταντίνος Ανάπτυξη μοντέλου κοστολόγησης της χονδρεμπορικής αγοράς ηλεκτρικής ενέργειας με την χρήση του αλγόριθμου

επίλυσης των συζευγμένων χονδρεμπορικών αγορών ηλεκτρικής ενέργειας EUPHEMIA *(ΔΔΟΜΟ) (2019).*

- Αλέξανδος Κωνσταντόπουλος. Difference Equations and applications on loan's amortiazation. (Ποσοτική Επενδυτική)(2020)

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 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
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

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".

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 επιστημονικός 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»

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.

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)
- ♦ Αντιπρόσωπος Σχολής στην Επιτροπή Ερευνών του ΕΛΚΕ του ΕΚΠΑ (2015-2017)
- ♦ Αναπληρωτής Πρόεδρος Τμήματος Οικονομικών Επιστημών ΕΚΠΑ(2018-2020)
- ♦ Προεδρεύων Τμήματος Οικονομικών Επιστημών ΕΚΠΑ(2019-2020)
- ♦ **Πρόεδρος Τμήματος Οικονομικών Επιστημών ΕΚΠΑ**(2020-2024)
- ♦ Αντιπρόσωπος Σχολής στο ΚΕΔΙΒΙΜ ΕΚΠΑ (2021-20234)

SECTION B

ΕΠΙΣΤΗΜΟΝΙΚΕΣ ΕΡΓΑΣΙΕΣ-PAPERS

I have published 43 papers in peer review journals and 42 in congresses.
I have written 4 books in Greek and translated another one.

TOTAL NUMBER OF SELF-CITATIONS=156
TOTAL NUMBER OF OTHERS–CITATIONS =155
TOTAL NUMBER OF CITATIONS=311
H-Index=10

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
Sum	15	28	43

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		1	**1**	
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**	
Sum	**15**	**28**	**43**	

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).	5	7	12
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).	20	16	36
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).	17	10	25
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
S.Kotsios, SYMBOLIC SEQUENCES GENERATED BY A SPECIAL CLASS OF DISCRETE SYSTEMS WITH DISCONTINUITY AND INPUT. Nonlinear Dynamics 22: 175-191, (2000).	1	4	5
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.	12	2	14
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	1
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	6
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 6		9
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	28	46
George Athanasiou, Stelios Kotsios AN ALGORITHMIC APPROACH TO EXCHANGE RATE STABILIZATION. Economic Modelling 25 (2008) 1246–1260.	6	2	8
Ilias Kostarakos-Stelios Kotsios "FISCAL POLICY IN GREECE IN THE AFTERMATH OF THE CRISIS: AN ALGORITHMIC APPROACH", It has been accepted for publication in Computational Economics.	7	2	9
Ilias Kostarakos-Stelios Kotsios "FEEDBACK POLICY RULES FOR GOVERNMENT SPENDING: AN ALGORITHMIC APPROACH", It has been accepted for publication inJournal of Economic Structures.	4	3	7
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.		1	1
S.Kotsios "A SYMBOLIC COMPUTATIONAL ALGORITHM FOR DESIGNING FEEDBACK STABILIZERS OF POLYNOMIAL NONLINEAR SYSTEMS" IMA Journal of	2	3	5

Mathematical Control and Information, Volume 28, Issue 4, December 2011, Pages 463–474, https://doi.org/10.1093/imamci/dnr016			
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.		1	1
Spyrakis, V., & Kotsios, S. (2021). Public debt dynamics: the interaction with national income and fiscal policy. Journal of Economic Structures, 10(1), 1-22.		1	1
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		1	1
Sum	156	155	311

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).

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).

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).

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).

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).

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).

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).

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

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).

10. **S. Kotsios FINITE INPUT/OUTPUT REPRESENTATION OF A CLASS OF VOLTERRA POLYNOMIAL SYSTEMS.** Automatica, VOL. 33, No 2, pp 257-262 (1997).

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

12. **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).

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).

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).

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.**

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

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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

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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.

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.

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.

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

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.

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

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

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).

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)

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).

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

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).

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).

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

18. P.E.Petrakis – S. Kotsios «Growth, Entrepreneurship and Uncertainty», 3rd International Symposium Economy 2004, Bulgaria, (14-17 September 2004), 47 σελ.

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20. S.Kotsios (Chairman) A MODEL MATCHING ALGORITHM FOR A CLASS OF NONLINEAR DISCRETE SYSTEMS. A SYMBOLIC APPROACH. CDC-ECC 2005, Seville, SPAIN.

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.

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.

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

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.

CITATIONS

AUTHOR	TITLE	JOURNAL

1	Kazakos D., Tsinias J.:	"Stabilization of Nonlinear Discrete Systems using State Detection	IEEE Transactions on Automatic Control, Vol.38, No. 9, 1398-1400, 1993
2	Zhong-Ping Jiang, Yuan Wang	" Input-to-state stability for discrete-time nonlinear systems"	Automatica 37 (2001) 857-869.
3	Zhong-Ping Jiang, Yuan Wang	" A converse Lyapunov theorem for discrete-time systems with disturbance",	Systems and Control Letters 45 (2002) 49-58.
4	J. Tsinias and N. Kalouptsidis	"Output Feedback Stabilization of Discrete-Time Control Systems"	IMA J Math Control Info, 1990; 7: 257 - 268.
5	Iasson Karafyllis	"Non-uniform in time robust global asymptotic output stability for discrete-time systems"	IMA J Math Control Info, March 2006; 23: 11 - 41.
6	Iasson Karafyllis	"Non-uniform in time robust global asymptotic output stability for discrete-time systems"	International Journal of Robust and Nonlinear Control Volume 16, Issue 4, Date: 10 March 2006,Pages: 191
7	Zhijun Zeng	"Converse Lyapunov Theorems for non Autonomous Discrete time Systems"	Journal of Mathematical Sciences, Vol. 161, No. 2, 2009

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.

CITATIONS

	AUTHOR	TITLE	JOURNAL
1	Zumer S., Blinc R., Milia F., Papavassiliou G.:	"Spine Lattice Relaxation Due to Sliding of the Modulation Wave in Incommensurate Systems with Impurities"	Physical Review B- Condensed Matter, Vol. 46, No. 5, 2758-2763, 1992.
2	Milia F., Papavassiliou G., Anagnostopoulos A.:	"NQR study of the pinning and depinning of the incommensurate modulation wave in the presence of impurities.	Zeitschrift fur Naturforschung Section A, Vol. 47, No. 1-2, 237-240, 1992.
3	Papavassiliou G., Anagnostopoulos A., Milia F.:	"Impurity Pinning and Thermally Excited Collective Motions in Incommensurately Modulated Structures."	Journal of Physics-Condensed Matter, Vol. 5, No. 50, 9295-9306, 1993.
4	Papavassiliou G., Leventis A., Milia F., Dolinsek J.:	Diffusion like Motion of the Modulation Wave in Incommensurate Systems. A NQR Study	Physical Review Letters, Vol. 74, No. 12, 2387-2390, 1995.
5	Belyaev O.A.:	Hyperphasons and the effect of incommensurate modulation on elastic properties of quasicrystals	Crystallography Reports, Vol. 45, No. 2, pp 187-194, 2000.
6	H. Kubo[1] and S. Farjami	Lattice study of the incommensurate ω phase transition in Zr-Nb alloys	PHYSICAL REVIEW B 83, 134302 (2011)

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.

CITATIONS

	AUTHOR	TITLE	JOURNAL

1	N. Kalouptsidis	**Block Shift Invariance and Efficient System Identification Algorithms**	Linear Algebra for Large Scale and Real-Time Applications NATO ASI Series Volume 232, 1993, pp 219-229
2	Pro-Chiang Yeh and Petar V. Kokotovic	**Adaptive Output-Feedback Design for a class of Nonlinear Discrete-Time Systems**	IEEE Trans. on Aut. Control, Vol. 40, No. 9, pp 1663-1668, 1995.
3	Yamanaka O., Ohmori H., Sano A	**Stable Exact Model Matching: Control For Finite Volterra Series Systems**	Control 95: Meeting the Challenge of Asia Pacific Growth; Preprints; pages: 85-89. Barton, ACT: Institution of Engineers, Australia, 1995.
4	Yamanaka O., Ohmori H., Sano A.	**Stability Analysis of Exact Model-Matching Control for Finite Volterra Series Systems**	IEICE Transactions on Fundamentals of Electronics Communications and Computer Science, Vol. E80A, No 1, 166-175, 1997.
5	Yamanaka, O.; Ohmori, M.; Sano, A.:	**Stability Analysis of Exact Model-Matching Control for Finite Volterra Series Systems**	Decision and Control, 1995., Proceedings of the 34th IEEE Conference Volume 4, Issue , 13-15 Dec 1995 Page(s):3785 - 3790 vol.4
6	Hans Oonk, Tonnie Boom	**Validation of landfill gas formation models**	Studies in Environmental Science , vol. 65, pp. 597-602, 1995
7	S.A. Vakhrameev	**Geometrical and topological methods in optimal control theory**	Journal of Mathematical Sciences 10/1995; 76(5).
8	Yamanaka, O.; Ohmori, M.; Sano, A.:	**Design Method of Exact Model-Matching Control for Finite Volterra Series Systems**	International Journal of Control, 1997, Vol. 68, Iss 1, pp 107-124.
9	Ulle Kotta	**Model Matching Problem for Nonlinear Recursive Models**	Proceedings of the Estonian Academy of Sciences, Physics and Mathematics 1997,46,4,251-261.
10	Luh GC, Wu CY:	**Inversion Control of nonlinear systems with an inverse NARX model identified using genetic algorithms**	PI MECH ENG I-J SYS 214 (14): 259-271, 2000.
11	Luh GC, Cheng WC	**Nonlinear system identification using an artificial immune systems.**	PI MECH ENG I-J SYS 215 (16): 569-585, 2001.
12	Billings S.A., Lang Z.Q	**Nonlinear systems in the frequency domain: energy transfer filters.**	International Journal of Control, 2002, Vol. 75, Iss 14, pp 1066-1081.
13	ZQ Lang, M Futterer, SA Billings	**The Identification of a class of Nonlinear Systems Using a Correlation Analysis Approach**	16th IFAC World Congress Prague 2005.
14	C. Lyzell, T. Glad, M. Enqvist, L. Ljung	**Difference algebra and system identification**	Automatica Volume 47, Issue 9, September 2011, Pages 1896–1904
15	Christian Lyzell	**Structural Reformulations in System Identification**	Linköping studies in science and technology. Dissertations. No. 1475 , 2012
16	Stephen A. Billings	**Nonlinear System Identification: NARMAX Methods in the Time, Frequency, and Spatio-Temporal Domains**	John Wiley & Sons, 8 Ιουλ 2013 - 576 σελίδες

5. 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.

CITATIONS

	AUTHOR	TITLE	JOURNAL
1	S.A. Vakhrameev	**"Geometrical and topological methods in optimal control theory"**	Journal of Mathematical Sciences 10/1995; 76(5).
2	Carini A., Sicuranza Gl., Mathews Vj.	**" On the Inversion of Certain Nonlinear Systems"**	IEEE Signal Processing Letters, Vol. 4, No. 12, pp 334-336, 1997.
3	Carini A., Sicuranza Gl., Mathews Vj.	**"On the Exact Inverse and the pth Order Inverse of Certain Nonlinear Systems."**	1997 IEEE Workshop on Nonlinear Signal and Image Processing.
4	Mumolo E. and Carini A	**"On the Stability of Discrete time recursive Volterra Filters"**	IEEE Signal Processing Letters, Vol. 6, No. 9, pp 230-232, 1999.
		" Inversion Control of nonlinear systems with	PI MECH ENG I-J SYS 214 (14): 259-271, 2000.

5	Luh GC, Wu CY	an inverse NARX model identified using genetic algorithms."	
6	Luh GC, Cheng WC	" Nonlinear system identification using an artificial immune systems."	PI MECH ENG I-J SYS 215 (16): 569-585, 2001.
7	Kalouptsidis N, Koukoulas P., Mathews VJ.	" Blind Identification of Bilinear Systems."	IEEE T SIGNAL PROCESS 51 (2): 434-499, 2003.
8	Wei-Chong Cheng	"Nonlinear System Identification and Fault Diagnosis Using Artificial Immune Network"	Dissertation for Ph.D. Degree Department of Mechanical Engineering Tatung University, June 2004
9	Sharma	"A connection between multi-linear and Volterra systems."	APPLIED MATHEMATICS AND COMPUTATION, 216, (7), 1918-1922, JUN 1 2010
10	F Hartung, E Awwad, I Gyori	BIBO stability of discrete control systems with several time delays.	Miskolc Mathematical Notes, 2018 - real.mtak.hu

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.

CITATIONS

	AUTHOR	TITLE	JOURNAL
1	Wirth F.	"Dynamics and controllability of nonlinear discrete-time control systems"	4th IFAC Nonlinear Control Systems Design Symposium, NOLCOS98, Enschede, The Netherlands, 269 - 275, 1998
2	Iasson Karafyllis	"Non-uniform robust global asymptotic stability for discrete-time systems and applications to numerical analysis"	IMA J Math Control Info, March 2006; 23: 11 – 41
3	Fernando Ornelas-Tellez, Edgar N. Sanchez, Alexander G. Loukianov, J. Jesus Rico	"Robust inverse optimal control for discrete-time nonlinear system stabilization"	European Journal of Control Volume 20, Issue 1, January 2014, Pages 38–44

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.

CITATIONS

	AUTHOR	TITLE	JOURNAL
1	Zhang LQ, Lam J, Huang B, et al	"On grammians and balanced truncation of discrete- time bilinear systems. "	INT J CONTROL 76 (4): 414-427, 2003
2	Ling-Yan Fan, Chen He, Xiao-Lin Che	"Adaptive minimum entropy beam former for wireless communication"	In proceeding of: VLSI Design and Video Technology, 2005. Proceedings of 2005 IEEE International Workshop on Source
3	Chien-Hua Lee	"Robust Stability and Transient Response Estimation of Homogeneous Bilinear Time-Delay Systems with Uncertainties and Saturating Actuators"	Journal of Cheng Shiu University Vol.19 pp87-98 (2006).
4	Ping Li, Shou-ming Zhong	"BIBO stabilization for system with multiple mixed delays and nonlinear perturbations "	Applied Mathematics and Computation 196 (2008) 207–213.
5	Sundararajan Sangeetha, Joseph Jesu Christopher, Swaminathan Ramakrishnan	"Wavelet Based Qualitative Assessment of Femur Bone Strength Using Radiographic Imaging"	Proceedings of World Academy of Science: Engineering & Technology, Jul2008, Vol. 43, p107.
6	Li P, Zhong SM, Cui JZ	"Delay-dependent robust BIBO stabilization of uncertain system via LMI approach."	CHAOS SOLITONS & FRACTALS, 40 ,2, 1021-1028 APR 30 2009
7	Chen CY, Lee CH	"Robust stability of homogeneous large-scale bilinear systems with time delays and uncertainties ."	JOURNAL OF PROCESS CONTROL, 19, 7, 1082-1090, JUL 2009
8	Lee, C.-H. ., Chen, C.-Y.	"On the robust stability of homogeneous perturbed large-scale bilinear systems with time delays and constrained inputs"	World Academy of Science, Engineering and Technology, Volume 65, May 2010, Pages 131-136.
9	Lin Tien, Kai-YuanCai, YanLin	"On controllability of discrete-time bilinear systems"	Journal o f the Franklin Institute348(2011)933–940
10	Tsung-Lieh Hsien and Chien-Hua Lee	"Robust Stability of Discrete Bilinear Uncertain Time-Delay Systems"	Circuits, Systems, and Signal Processing Volume 30, Number 6, 1417-1443, (2011)
11	Wang X., Jiang Y.	"Model reduction of bilinear systems based on Laguerre series expansion"	(2012) Journal of the Franklin Institute, 349 (3) , pp. 1231-1246.
12	V. Soni and G. Parmar	AN ANALYSIS TO DESIGN MERGED DELAY TRANSFORMED IIR DOWN SAMPLER FILTER: AN EFFICIENT DOWN SAMPLER FILTER ARCHITECTURE	ICTACT JOURNAL ON MICROELECTRONICS, OCTOBER 2015, VOLUME: 01, ISSUE: 03
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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.

1	Jefferson Osowsky Carlos E. de Souza Daniel Coutinho	Regional stability of two-dimensional nonlinear polynomial Fornasini-Marchesini systems	*International Journal of Robust and Nonlinear Control, 2018 - Wiley Online Library*

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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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4	XING JIAN JING*, ZI QIANG LANG and STEPHEN A. BILLINGS	"Mapping from parametric characteristics to generalized frequency response functions of non-linear systems."	" International Journal of Control, Vol. 81, No. 7, July 2008, 1071–1088.
5	Xing Jian Jing, Zi Qiang Lang, Stephen A. Billings	" Magnitude bounds of generalized frequency response functions for nonlinear Volterra systems described by NARX model"	Automatica 44 (2008) 838 – 845
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8	Xingjian Jing	"Frequency domain analysis and identification of block-oriented nonlinear systems"	Journal of Sound and Vibration, Volume 330, Issue 22, 24 October 2011, Pages 5427–5442.
9	Xingjian Jing, Z. Q. Lang	The Parametric Characteristics of the GFRFs and the Parametric Characteristics Based Analysis	DOI: 10.1007/978-3-319-12391-2_5 In book: Frequency Domain Analysis and Design of Nonlinear Systems based on Volterra Series Expansion, pp.65-82, 2015.
10	Xingjian Jing, Z. Q. Lang	The Generalized Frequency Response Functions and Output Spectrum of Nonlinear Systems	DOI: 10.1007/978-3-319-12391-2_2 In book: Frequency Domain Analysis and Design of Nonlinear Systems based on Volterra Series Expansion, pp.9-30, 2015.

11. S. Kotsios-Or. Feely
SOME RESULTS ON 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.

12. 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).

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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4	Zixin Liu, , Shu Lu, Shouming Zhong	"Augmented Lyapunov Method for BIBO Stabilization of Discrete Systems"	Journal of Mathematical Research, Vol. 2, No 1, February 2010
5	Bao-Zhu ZHAO , Jie-Hong XU, Qing ZHANG	BIBO stabilization of BAM neural networks with discrete time delays	South Asian Journal of Mathematics 2011 , Vol.1 (3), 150 -157

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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2	V. Soulioti, Y. Bakopoulos, S. Kouremenos, S. Vikolopoulos, Y. Vrettaros and A.S.Drigas	" Quantum Key Distribution and Adaptive Protocols"	WSEAS Transactions on Communications, issue 10, volume 3, p.p. 3345-3349, 2004.
3	Y.Bakopoulos, N.Lygeros, A. Drigas	"Adaptive encryption protocols"	(2005) WSEAS TRANSACTIONS ON COMMUNICATIONS (8) 4 pp. 694-700.
4	Aggarwal, A., Bakopoulos, Y., Soulioti, V., Bardis, N., Kouremenos, S., Nikolopoulos, S.	"Stream ciphers created by a discrete dynamic system for application in the internet"	WSEAS Transactions on Computers 5 (1), pp. 85-96, 2006

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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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2	X Jing, Z Xiao	"On Convergence of Volterra Series Expansion of a Class of Nonlinear Systems"	Asian Journal of Control, Vol. 19, No. 3, pp. 1–14, May 2017

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).

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.
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Abstract. In this paper, we study the symbolic sequences generated by a class of discrete systems. This class contains the double $\Sigma\Delta$-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.

CITATIONS

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1	V.Soulioti Y.Bakopoulos, S.Kouremenos, Y.Vrettaros, S.Nikolopoulos, A.Drigas:	" **Stream Ciphers created by a Discrete Dynamic System for application in the Internet.**"	(2004) WSEAS TRANSACTIONS ON COMMUNICATIONS (3) 2 pp. 679-687.
2	V. Soulioti, Y. Bakopoulos, S. Kouremenos, S. Vikolopoulos, Y. Vrettaros and A.S.Drigas	" **Quantum Key Distribution and Adaptive Protocols**"	WSEAS Transactions on Communications, issue 10, volume 3, p.p. 3345-3349, 2004.
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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.

1	Jefferson Osowsky Carlos E. de Souza Daniel Coutinho	Regional stability of two-dimensional nonlinear polynomial Fornasini-Marchesini systems	*International Journal of Robust and Nonlinear Control, 2018 - Wiley Online Library.* *https://doi.org/10.1002/rnc.4018*

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).

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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3	Christian Lyzell, Torkel Glad, Martin Enqvist, Lennart Ljung	**"Identification Aspects of Ritt's Algorithm for Discrete-Time Systems"**	Report no.: LiTH-ISY-R-2891Accepted for publication in 15th IFAC Symposium on System Identification, Saint-Malo, France.
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19. S. Kotsios

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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2	Djilali Behloul, Sui Sun Cheng	"Polynomial solutions of a non linear difference equation"	Numerical Algorithms 02/2014; DOI: 10.1007/s11075-013-9707-x
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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.

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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2	Ioannis K. Dassios and Mel T. Devine	A macroeconomic mathematical model for the national income of a union of countries with interaction and trade	Economic Structures (2016) 5:18 DOI 10.1186/s40008-016-0049-4

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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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2	Iasson Karafyllis, Miroslav Krstic	**"Robust predictor feedback for discrete-time systems with input delays"**	International Journal of Control, Volume 86, Issue 9, 2013, pages 1652-1663
3	Fernando Ornelas-Tellez, Edgar N. Sanchez, Alexander G. Loukianov, J. Jesus Rico	**"Robust inverse optimal control for discrete-time nonlinear system stabilization"**	European Journal of Control Volume 20, Issue 1, January 2014, Pages 38–44
4	Lisheng Wang and Zongben Xu	**"Quantitative Studies on Asymptotic Growth Behaviors of Trajectories of Nonlinear Discrete Dynamical Systems"**	IEEE Transactions on Automatic Control, vol. 59, no. 7, July 2014
5	Leonid Shaikhet	**Optimal Control of Stochastic Difference Volterra Equations**	Studies in Systems, Decision and Control Volume 17 2015

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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1	Djilali Behloul, Sui Sun Cheng	**Polynomial Solutions of a Class of Algebraic Differential Equations with Quadratic Nonlinearities**	Southeast Asian Bulletin of Mathematics (2009) 33: 1029–1040

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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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2	Wahyudi Sutopo1, Senator Nur Bahagia2, Andi Cakravastia and TMA. Ari Samadhi	**"A buffer stock model for stabilizing price with considering the expectation stakeholders in the staple-food distribution system."**	The 20th National Conference of Australian Society for Operations Research & the 5th International Intelligent Logistics System Conference, 2009.
3	W. Sutopo, S. Nur Bahagia, A. Cakravastia, T. M. A. Arisamadhi	**"A Buffer Stocks Model for Stabilizing Price in Duopoly-Like Market"**	2nd Asia Pacific Conference on Manufacturing System 4-5 November 2009, Yogyakarta, Indonesia
4	Iasson Karafyllis, Zhong-Ping Jiang, George Athanasiou	**"Nash equilibrium and robust stability in dynamic games: A small-gain perspective"**	Computers and Mathematics with Applications 60 (2010) 2936–2952
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7	Raymond Swaray	**"Commodity buffer stock redux: The role of International Cocoa Organization in prices and incomes"**	Journal of Policy Modeling 33 (2011) 361–369
8	W. Sutopo, S. Nur Bahagia, A. Cakravastia, T. M. A. Arisamadhi	**"A Buffer Stock Model to Ensure Price Stabilization and Availability of Seasonal Staple Food by Empowering Producer Using Warehouse Receipt System."**	Proceedings of the 2011 IEEE-IEEM
9	Tsorng-Chyi Hwang, Meng-Gu Chen, Chia-Lin	**"Chang Price stabilization in the Taiwan hog and broiler industries: Evidence from a STAR approach"**	Mathematics and Computers in Simulation Volume 82, Issue 2, October2011, Pages 213–219.
10	Sophie Mitra, Jean-Marc Boussard	**"A Simple Model of Endogenous Agricultural Commodity Price Fluctuations with Storage"**	Discussion Paper No: 2011-05 August 2011 Department of Economics Fordham University, NY.
11	Iasson Karafyllis, Zhong-Ping Jiang	**"Stability and Stabilization of Nonlinear Systems"**	Springer 2011
12	Wahyudi Sutopo, Senator Nur Bahagia, Andi Cakravastia & T.M.A. Arisamadh	**"A Buffer Stock Model to Ensure Price Stabilization and Availability of Seasonal Staple Food under Free Trade Considerations"**	DOI Number : 10.5614/itbj.eng.sci.2012.44.2.3
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14	M.Anokye, F.Oduro	**"Cobweb Model with Buffer Stock for the Stabilization of Tomato Prices in Ghana"**	Journal of Management & Sustainability, 3(1), pp.155-165, 2013
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16	Athanasios G. Lazaropoulos and Panagiotis Lazaropoulos	**Financially Stimulating Local Economies by Exploiting Communities' Microgrids: Power Trading and Hybrid Techno-Economic (HTE) Model**	Trends in Renewable Energy, 2015, Vol.1, No.3, 131-184.
17	Sutopo, Wahyudi and Bahagia, Senator Nur and Cakravastia, Andi and Samadhi	**A BUFFER STOCK MODEL FOR STABILIZING PRICE WITH CONSIDERING THE EXPECTATION STAKEHOLDERS IN THE STAPLE-FOOD DISTRIBUTION SYSTEM**	The 20th National Conference of Australian Society for Operations Research & the 5th International Intelligent Logistics System Conference (2013)
18	Ahmad Naimzada, and Marina Pireddu	**Introducing a price variation limiter mechanism into a behavioral financial market model**	Chaos 25, 083112 (2015); doi: 10.1063/1.4927831
19	Martin Anokye1* and Francis T. Oduro2	**Maize Price Stabilization in Ghana: An Application of a Continuous-Time Delay Differential Equation Model with Buffer Stock**	British Journal of Mathematics & Computer Science 6(4): 279-296, 2015,
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21	Mahesa Jenar*), Wahyudi	**PENGEMBANGAN MODEL *GAME THEORY***	Jurnal Teknik Industri, Vol. X, No. 2, Mei 2015,pp

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26	*Mehmood, K.[1] ul. Hasan, M.[2] Khan, A.[1]*	**DOES COBWEB PHENOMENON EXIST IN RICE MARKET OF PAKISTAN? A TIME SERIES ANALYSIS.**	*JAPS: Journal of Animal & Plant Sciences. 10/31/2022, Vol. 32 Issue 5, p1356-1362. 7p.*
27	*Dominika Roy Cassius Buxton Simra Lawson*	**Influential Article Review - An Analytic View to Government Spending Strategy Response Guidelines**	*Journal of Management Policy and Practice Vol. 22(4) 2021*
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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.

1	Khumbuzile Dladla and Hlalefang Khobai	The impact of Taxation on Economic Growth in South Africa.	Online at https://mpra.ub.uni-muenchen.de/86219/ MPRA Paper No. 86219, posted 17 April 2018 17:52 UTC

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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2	Athanasios G. Lazaropoulos1* and Panagiotis Lazaropoulos2	Financially Stimulating Local Economies by Exploiting Communities' Microgrids: Power Trading and Hybrid Techno-Economic (HTE) Model	Trends in Renewable Energy ISSN: 2376-2144 futureenergysp.com/index.php/tre

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

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.

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.

1	C Possieri, A Tornambè	On polynomial vector fields having a given affine variety as attractive and invariant set: application to robotics	International Journal of Control Volume 88, 2015 - Issue 5 , pp 1001-1025
2	Zhong Cao,Xiaorong Hou &Wenjing Zhao	Adaptive H∞ control of polynomial Hamiltonian systems via symbolic computation: controller parameterisation	Journal Journal of Control and Decision Volume 7, 2020 - Issue 2 Pages 160-177
3	D Pylorof, E Bakolas	Safe nonlinear control design for input constrained polynomial systems using sum-of-squares programming	International Journal of Control, *2020* - Taylor & Francis, *Volume 94, 2021 - Issue 9*

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.

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

1	Dimitrios Pylorof, Efstathios Bakolas	Safe nonlinear control design for input constrained polynomial systems using sum-of-squares programming	February 2020, International Journal of Control, DOI: [10.1080/00207179.2020.1726469](10.1080/00207179.2020.1726469)

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.

CITATIONS

1	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
2	*Ying Yu*	GDP Economic Forecasting Model Based on Improved RBF Neural Network	**Mathematical Problems in Engineering** *Volume 2022	Article ID 7630268	https://doi.org/10.1155/2022/7630268*

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.

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.

CITATIONS

1	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
2	Narcis BRÂNDUȘESCU	THE ANALYSYS OF ROMANIAN GOVERNMENT INVESTMENT EXPENDITURE IN 2008 – 2017 INTERVAL	Scientific Bulletin – Economic Sciences, Volume 17/ Special Issue EtaEc 2018, pp 119-124.
3	Fabio Tramontana & Laura Gardini	Revisiting Samuelson's models, linear and nonlinear, stability conditions and oscillating dynamics	Journal of Economic Structures volume 10, Article number: 9 (2021)

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.

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 $\tau_{n+1}Y_n$, should balance out current government spending on goods and services G_{n+1} plus the cost of servicing current debt $r_n B_n$, that is, $B_{n+1} = (1 + r_n)B_n - \tau_{n+1}Y_n + G_{n+1}, \ \ n = 0, 1, \ldots,$ where, r_n and τ_{n+1} 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

$$Y_{n+1} = b(1 + k)Y_n - bkY_{n-1} + G, \ \ n = 0, 1, \ldots,$$

where $b \in (0, 1)$ is the marginal propensity to consume and $k \in (0, \infty)$ is the acceleration coefficient.

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.

| 1 | Sihem OUDİNA Mohamed Amine KERKER Abdelouahab SALMİ | On the global behavior of the rational difference equation yn+1=αn+yn−rαn+yn−ky_{n+1} =\frac{\alpha_n+y_{n-r}}{\alpha_n+y_{n-k}}*yn+1=αn+yn−kαn+yn−r* | *Results on nonlinear Analysis* *https://doi.org/10.53006/rna.974156* |

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.

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.

| 1 | *Irina B. Mironova*, *Lilia R. Moiseeva*, *Elmira F. Nigmatulina* **&** *Marina G. Mirgorodskaya* | Fiscal Policy, Control, and Supervision to Ensure Food and Energy Security and Sustainable Development | *Geo-Economy of the Future* **pp 885–891** |

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.

| 1 | Vasilios N.Katsikis[a]Spyridon D.Mourtas[ab]Predrag S.Stanimirović[cb]ShuaiLi[d]XinweiCao[e] | Time-varying minimum-cost portfolio insurance problem via an adaptive fuzzy-power LVI-PDNN | Applied Mathematics and Computation Volume 441, 15 March 2023, 127700 |

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

CITATIONS

	AUTHOR	TITLE	JOURNAL
1	Y.Bakopoulos, N.Lygeros, A. Drigas	" Adaptive encryption protocols "	(2005) WSEAS TRANSACTIONS ON COMMUNICATIONS (8) 4 pp. 694-700.

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.

CITATIONS

	AUTHOR	TITLE	JOURNAL
1	Li P, Zhong SM, Cui JZ	" Delay-dependent robust BIBO stabilization of uncertain system via LMI approach "	CHAOS SOLITONS & FRACTALS, 40, 2 , 1021-1028, APR 30 2009
2	L Ying Shang, Michael K. Sain	"Fixed poles in the model matching problem for systems over semirings."	Linear Algebra and its Applications 430 (2009) 2368–2388
	Ying Shang, Michael K. Sain	"Fixed zeros in the model matching	semirings Linear Algebra and its Applications 434

3		problem for systems over semirings."	(2011) 18–43.
4	Juri Belikov, Miroslav Halas, ´ Ulle Kotta and Claude H. Moog,	"Model Matching Problem for Discrete-time Nonlinear Systems: Transfer Function Approach."	2011 9th IEEE International Conference on Control and Automation (ICCA) Santiago, Chile, December 19-21, 2011.
5	Juri Belikov, Miroslav Halas, ´ Ulle Kotta and Claude H. Moog,	Model Matching Problem for Discrete-time Nonlinear Systems	Proceedings of the Estonian Academy of Sciences 64(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.

CITATIONS

	AUTHOR	TITLE	JOURNAL
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 88(5):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.

CITATIONS

	AUTHOR	TITLE	JOURNAL
1	AKSHAI AGGARWAL, YANNIS BAKOPOULOS, GEORGE VOSSINAKIS, AGAMEMNON GIANNAKOPOULOS, LEONIDAS THEODOROU	COMPLEXITY IN SKELETONIZATION ON A DISCRETE LATTICE	(2005) WSEAS TRANSACTIONS ON COMMUNICATIONS (8) 4 pp. 694-700.

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.

1	Athanasios G. Lazaropoulos1* and Panagiotis Lazaropoulos2	Financially Stimulating Local Economies by Exploiting Communities' Microgrids: Power Trading and Hybrid Techno-Economic (HTE) Model	Trends in Renewable Energy ISSN: 2376-2144 futureenergysp.com/index.php/tre

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.

3. Charalampos Domenikos and Stelios Kotsios, "Controlling GDP and debt with a Kaleckian model", under review στο Review of political economy (ROPE).

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."

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

5. **Spyrakis, Kotsios, 2022, Public debt and nonlinear investment functio, working. Το όνομα είναι υπό διερεύνηση.**

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

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

8. **Stelios Kotsios. "Regional Model Matching and Stability of Discrere Billinear Systems. A Computational Algebra Approach."**

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 ΙΙ
Πανεπιστήμιο Αθηνών - Τμήμα Οικονομικών Επιστημών
Στέλιος Κώτσιος - Γιώργος Αθανασίου

3.Σημειώσεις Mathematica

Πανεπιστήμιο Αθηνών - 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)**

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

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

7. Στ.Κώτσιος – Ι.Λώμης. MATHEMATICA ΓΙΑ ΟΙΚΟΝΟΜΟΛΟΓΟΥΣ, (2023), Κάλλιπος, σελίδες 275.

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 –	University of Athens	700.000 Drachmas	Internal Grant of University of	Coordinator	2000-2001

Research Grant			Athens		
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

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.