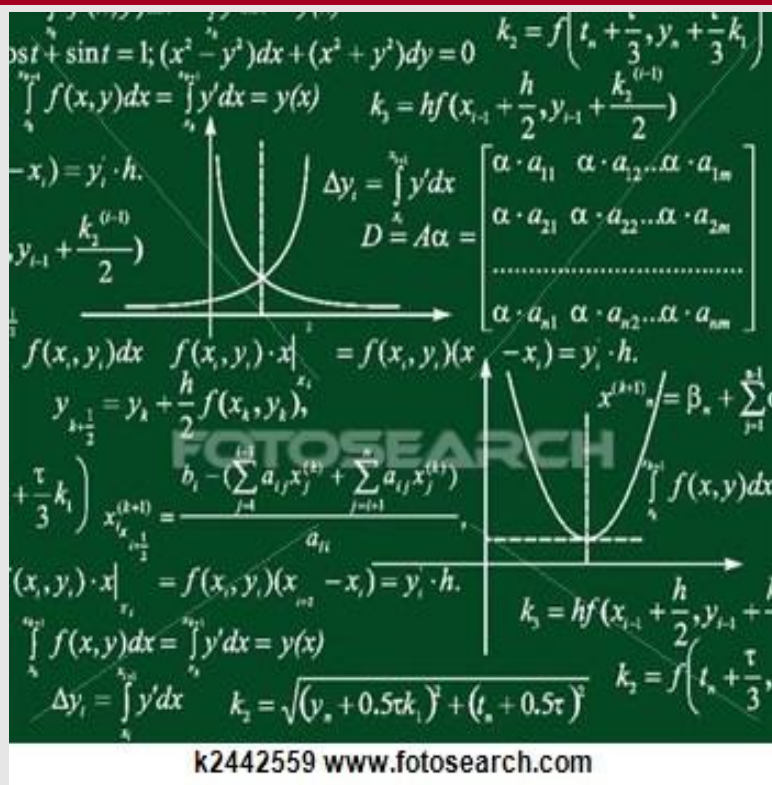


Εργαστήριο Υπολογιστικών Μαθηματικών



Δημοκρίτειο
Πανεπιστήμιο Θράκης
Πολυτεχνική Σχολή
Τμήμα Μηχανικών
Παραγωγής & Διοίκησης

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Σκοπός και στόχοι του εργαστηρίου Υπολογιστικών Μαθηματικών

Το εργαστήριο Υπολογιστικών Μαθηματικών καλύπτει μεγάλο μέρος των πρωτογενών ερευνητικών δραστηριοτήτων της Σχολής και του Τμήματος και προσφέρει την υλικοτεχνική υποδομή για πρωτογενή έρευνα.

Το εργαστήριο Υπολογιστικών Μαθηματικών συμβάλλει στο διεπιστημονικό διάλογο και την έρευνα μεταξύ των μελών ΔΕΠ του Τμήματος και της Σχολής αλλά και των άλλων Τμημάτων και Σχολών του Δ.Π.Θ. καθώς και ομοειδών Σχολών και Τμημάτων της χώρας.

Το εργαστήριο Υπολογιστικών Μαθηματικών ως κέντρο έρευνας καλύπτει σημαντικά κενά και εξυπηρετεί τις εκπαιδευτικές, ερευνητικές και αναπτυξιακές ανάγκες στα γνωστικά αντικείμενα της Μαθηματικής Ανάλυσης I και II, των Διαφορικών Εξισώσεων, των Πιθανοτήτων και της Στατιστικής, των Αριθμητικών Μεθόδων Μοντελοποίησης, της Αριθμητικής Ανάλυσης, της Γραμμικής Άλγεβρας και των Διακριτών Μαθηματικών, της Αριθμητικής Γραμμικής Άλγεβρας, της Επιχειρησιακής Έρευνας, του Γραμμικού Προγραμματισμού, της Εισαγωγής στην επιστήμη των Η/Υ, του Δομημένου Προγραμματισμού (γλώσσα C), του Αντικειμενοστραφούς Προγραμματισμού (γλώσσα C++), της Προσομοίωσης, των Δομών Δεδομένων & Αρχείων κ.λ.π. Παράλληλα αποτελεί την υλική βάση για την περαιτέρω ανάπτυξη της συνεργασίας της Σχολής και του Τμήματός μας με άλλες Σχολές και Τμήματα ή κέντρα Έρευνας της ημεδαπής ή αλλοδαπής, στα οποία προωθείται η διεπιστημονική έρευνα.

Ειδικότερα η έρευνα στους παραπάνω τομείς είναι αναπόσπαστη από το Εργαστήριο, ο εξοπλισμός και η στελέχωση του οποίου επιτρέπουν στους πανεπιστημιακούς διδάσκοντες την χρήση της σύγχρονης τεχνολογίας για την δημιουργία, επεξεργασία και έλεγχο της ερευνητικής εμπειρίας. Το Εργαστήριο Υπολογιστικών Μαθηματικών επιτρέπει την στήριξη και την προώθηση κοινών διεπιστημονικών ερευνητικών προγραμμάτων.

Περαιτέρω το Εργαστήριο Υπολογιστικών Μαθηματικών προσφέρει στους φοιτητές της Πολυτεχνικής Σχολής την ευκαιρία να δοκιμάσουν και να αξιολογήσουν τις δυνάμεις τους, να ασκηθούν και να αναπτύξουν την κριτική τους σκέψη σε θέματα σύνδεσης θεωρίας και πρωτογενούς υλικού, καθώς και στις νέες ερευνητικές τεχνολογίες στο χώρο των μαθηματικών, των υπολογιστικών συστημάτων και της πληροφορικής

Προσωπικό



- **Στέφανος Σπάρταλης**

Καθηγητής Αλγεβρικών Υπερδομών και Υπολογιστικών Μαθηματικών

Ερευνητικές περιοχές:

Άλγεβρα: Αλγεβρικές Υπερσυνθετικές δομές (Υπερομαδοειδή, Υπερμονοειδή, Ημι-υπερομάδες, Υπερομάδες, Υπερδακτύλιοι, Υπερσώματα, Υπερδιανυσματικοί Χώροι, Μερικώς ορισμένες Υπερσυνθετικές δομές), Ην-δομές, Διμελείς σχέσεις.

Υπολογιστικά Μαθηματικά: Εκτίμηση της επικινδυνότητας, Συστήματα Στήριξης των Αποφάσεων, Ασαφής Λογική, Ασαφής Άλγεβρα, Ασαφείς Σχέσεις.



- **Στέφανος Κατσαβούνης**

Επίκουρος Καθηγητής Αλγοριθμικής Προσέγγισης Συστημάτων Παραγωγής

Ερευνητικές περιοχές:

Αλγόριθμοι: χρωματισμού γράφων, χρονοδρομολόγησης διεργασιών συστημάτων παραγωγής, προγραμματισμού εφοδιαστικών αλυσίδων, δυναμικού προγραμματισμού στη διαχείριση έργων



- **Αντώνιος Καλαμπάκας** (εξωτερικός συνεργάτης)

Assistant Professor at American University of the Middle East, Kuwait

Ερευνητικές περιοχές: Θεωρία Γραφημάτων, Αναγνωρίσιμα σύνολα Γραφημάτων, Ασαφής Λογική, Ασαφή συστήματα, Ασαφή αναγνωσιμότητα, Πεπερασμένα Αυτόματα, Αυτόματα Γραφημάτων, Συντακτική Αναγνωσιμότητα, Συντακτική πολυπλοκότητα.



- **Κασσιανή Σκουλαρική**

Μαθηματικός, Επιστημονικός Συνεργάτης ΔΠΘ. Υποψήφια Διδάκτορας του Τμήματος Μ.Π.&Δ.

Διδασκόμενα μαθήματα

Υποχρεωτικά μαθήματα:

- A3Y Μαθηματική Ανάλυση I (1^ο εξάμηνο σπουδών)
- A1Y Γραμμική Άλγεβρα και διακριτά μαθηματικά (1^ο εξάμηνο σπουδών)
- B2Y Μαθηματική Ανάλυση II (2^ο εξάμηνο σπουδών)
- B10Y Επιχειρησιακή έρευνα (2^ο εξάμηνο σπουδών)
- B1Y Πιθανότητες και Στατιστική (2^ο εξάμηνο σπουδών)

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- Δ1Υ Διαφορικές Εξισώσεις (4^ο εξάμηνο σπουδών)
 - Α2Υ Εισαγωγή στην επιστήμη των Η/Υ (1^ο εξάμηνο σπουδών)
 - Β5Υ Δομημένος προγραμματισμός (γλώσσα C) (2^ο εξάμηνο σπουδών)
 - Γ2Υ Αντικειμενοστραφής προγραμματισμός C++ (3^ο εξάμηνο σπουδών)

Μαθήματα επιλογής:

- Γ4Ε Θεωρία Γράφων (επιλεγόμενο χειμερινού εξαμήνου)
- ΣΤ3Ε Αριθμητική Ανάλυση (επιλεγόμενο εαρινού εξαμήνου)

Μαθήματα μέσω e-class

- Α3Υ Μαθηματική Ανάλυση Ι (Κωδικός: TME166)
<https://eclass.duth.gr/eclass/modules/document/document.php?course=TME166>
- Α1Υ Γραμμική Άλγεβρα και διακριτά μαθηματικά (Κωδικός: TME165)
<https://eclass.duth.gr/eclass/courses/TME165/>
- Β2Υ Μαθηματική Ανάλυση Ι Ι (Κωδικός: TMA225)
<https://eclass.duth.gr/eclass/courses/TMA225/>
- Β10Υ Επιχειρησιακή έρευνα (Κωδικός: TME169)
<https://eclass.duth.gr/eclass/courses/TME169/>
- Δ1Υ Διαφορικές Εξισώσεις (Κωδικός: OPE02100)
<https://eclass.duth.gr/eclass/courses/OPE02100/>
- Α2Υ Εισαγωγή στην επιστήμη των Η/Υ (Κωδικός: TME120)
<https://eclass.duth.gr/eclass/courses/TME120/>
- Β5Υ Δομημένος προγραμματισμός (γλώσσα C) (Κωδικός: TME118)
<https://eclass.duth.gr/eclass/courses/TME118/>
- Γ2Υ Αντικειμενοστραφής προγραμματισμός C++ (Κωδικός: TME119)
<https://eclass.duth.gr/eclass/courses/TME119/>
- ΣΤ3Ε Αριθμητική Ανάλυση (Κωδικός: TME218)
<https://eclass.duth.gr/eclass/courses/TME218/>

Λογισμικά

■ Mathematica

<https://eclass.duth.gr/eclass/modules/document/document.php?course=TME165>

λογισμικό ppt

■ Mathematica - Matlab

<https://eclass.duth.gr/eclass/modules/document/document.php?course=TME166>

Mathematic&MATLABcomplete.pdf

<https://eclass.duth.gr/eclass/modules/document/document.php?course=TMA225>

Mathematica_and_Matlab_II_teliko.pdf

■ Solver

<https://eclass.duth.gr/eclass/modules/document/document.php?course=TME169>

σημειώσεις Solver 1 για εργαστήρια.doc

σημειώσεις Solver 2 για εργαστήρια.doc

■ Microsoft Visual Studio 2005 Standard Edition

Ερευνητική Δραστηριότητα

■ Δημοσιεύσεις Στέφανου Σπάρταλη

♦ Τον τίτλο κάθε εργασίας ακολουθούν οι υπάρχουσες κριτικές στα κριτικά περιοδικά Mathematical Reviews (M.R.), Current Mathematical Publications (C.M.P.) της American Mathematical Society και Zentralblatt fur Mathematic (Z.M.) της European Mathematical Society.

[A] Εργασίες δημοσιευμένες σε διεθνή περιοδικά με κριτές

J.1 «*On cyclic hyper-groups with period*», Acta Universitatis Carolinae Mathematica et Physica, Vol.28, No1,p.3-7, 1987 (M.R. # 89 c: 20107, Z.M. # 0658.20045) with L. Konguetsof, T. Vougiouklis, M. Kessoglides.

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J.3 «*A class of Hyperrings*», Rivista di Matematica Pura ed Applicata (Aviani Editore), N.4, p. 55-64, 1989 (M.R. # 91 h: 16076, Z. M. # 0719.16025).

J.4 «*Sur les hyperstructures tres fines*», Rendiconti di Matematica (Dip. di matematica, Universita degli studi di Roma), Serie VII, Volume 13, p. 297-304, 1993 (M.R. # 95h: 20090, Z.M. # 0804.20052), with L.Konguetsof, T. Vougiouklis.

J.5 «*The fundamental relations on Hv-rings*», Rivista di Matematica Pura ed Applicata (Aviani Editore), N. 14, p. 7-20, 1994 (M.R. # 95 h: 16061) , with T.Vougiouklis.

J.6 «*On the number of Hv-rings with P-hyperoperations*», Discrete Mathematics (Elsevier), No 155, p. 225-231, 1996 (M.R. # 97 d: 16054, Z.M. # 0857.16044).

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J.8 «*On Hv-Group Rings*», Algebras Groups and Geometries 15 (Hadronic Press USA), p.47-54, 1998 (C.M.P. # 1674789, Z. M. # 0995.16039), with A.Dramalides, T.Vougiouklis.

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J.35. “*Fuzzy Graphs: Algebraic Structure and Syntactic Recognition*”, δεκτή για δημοσίευση στο περιοδικό Artificial Intelligence Review (#AIRE-D-12-00257, Springer), with A. Kalampakas, L. Iliadis, I. Pimenidis.

J.36. “*Syntactic Recognizability of Graphs with Fuzzy Attributes*”, F.S.S. Fuzzy Sets and Systems (Elsevier), Vol. 229, p.91-100, 2013, A. Kalampakas, L. Iliadis.

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J.38. “*Recognizability in Stochastic Monoids*”, accepted for publication in the Journal Ratio Mathematica, Number 26, 2014, A. Kalampakas, O. Louscou-Bozapalidou.

[B] Εργασίες δημοσιευμένες σε πρακτικά διεθνών συνεδρίων με κριτές ή Book Chapter Proceedings με κριτές

P.1 “*(H,R)-Hyperring*”, Algebraic Hyperstructures and applications, World Scientific Publishing, World Scientific (BOOK CHAPTER PROCEEDINGS), ISBN 981-02-0479-5, Xanthi, Greece, p. 193-201, 1990 (M.R. # 92 g: 16065, Z.M. # 0773.16023).

P.2 “*On Reversible Hv-groups*”, Algebraic Hyperstructures and applications, Hadronic Press USA, (BOOK CHAPTER PROCEEDINGS), Iasi, Rumania, ISBN 0-911767-76-2, p.163-170, 1994 (M.R. # 95 e: 20001, Z.M. # 0842.20062).

P.3 «*Quotients of P-Hv-rings*», New Frontiers in Hyperstructures, Hadronic Press USA, (BOOK CHAPTER PROCEEDINGS), ISBN 960-85687-1-4, Monderoduni, Italy, p. 167-176, 1996 (C.M.P. # 1460519, Z.M. # 0883.16040).

P.4 «*Homomorphisms on (H,R)-Hv-Rings*», Sixth International Congress on AHA, Democritus Univ. Of Thrace Press, (BOOK CHAPTER PROCEEDINGS), ISBN 960-85687-1-4, Prague, Czech Republic, p.133-138, 1996 (C.M.P. # 1465199, Z.M. # 0883.16039).

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P.6 S.Spartalis, «*Hyperstructures based on P-hyperoperations*», Aristotle University of Thessaloniki Press (Honorary Volume dedicated to Prof. Emer. J.Mittas), Thessaloniki, Greece, p. 455-464, 2000.

P.7 “*Homomorphisms on S-Hv-semigroups*”, Constantin Caratheodory in his ... origins, Hadronic Press USA, (BOOK CHAPTER PROCEEDINGS), ISBN 1-57485-053-9, Orestiada, Greece, p. 173-178, 2001. (M.R. # 2003c: 00025, Z.M. # 0883.16039).

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P.10 “*Fundamental relations in special extensions*”, Algebraic Hyperstructures and applications, Spanidis Press, (BOOK CHAPTER PROCEEDINGS), ISBN 960-87499-5-6, Samothraki, Greece, p. 81-89, 2003 (C.M.P. # 2024852, M.R. # 2004q: 20001, Z.M. # 1063.20070), with N.Antampoufis, T.Vougiouklis.

P.11 “Fundamental Fuzzy Relation Concepts of a D.S.S. for the Estimation of Natural Disasters’ Risk (The case of a trapezoidal membership function)”, (BOOK CHAPTER PROCEEDINGS): COMPUTATIONAL METHODS IN SCIENCES AND ENGINEERING (World Scientific), International Conf. of Computational Methods in Sciences and Engineering ICCMSE2003, Kastoria, Greece, ISBN 981-238-595-9, p. 248-249, 2003 (περιορισμένη έκδοση της J.15), with L.Iliadis.

P.12 “*Special curves whose tangents form Minimal Surfaces. Applications in the Industry*”, ICNAAM2004 Intern. Conf. on Numerical Analysis and Applied Mathematics, WILEY-VCH, (BOOK CHAPTER PROCEEDINGS), ISBN 3-527-40563-1, Chalkis, Greece, p. 246-253, 2004 (Z.M. # pre02161740), with C.Mamaloukas.

P.13 “*A Decision Support System Unifying Fuzzy Trapezoidal Function Membership Values Using T-Norms: The case of river Evros Torrential Risk Estimation*”, (BOOK CHAPTER PROCEEDINGS): ICNAAM2004 International Conference on Numerical Analysis and Applied Mathematics, WILEY-VCH, Chalkis, Greece, p. 173-176, 2004, ISBN3-527-40563-1, (περιορισμένη έκδοση της P.25), with L.Iliadis, F.Maris, D.Marinos.

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1. **Fuzzy Graphs: Algebraic Structure and Syntactic Recognizability**, to appear in *Artificial Intelligence Review*, with S. Spartalis, L. Iliadis and E. Pimenidis.
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3. **Recognizability in Stochastic Monoids**, , to appear in *Ratio Mathematica*, with O. Louscou-Bozapalidou and S. Spartalis.
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7. **Minimization of Planar Directed Acyclic Graph Algebras**, *International Journal of Foundations of Computer Science* 24, 519-531, 2013, with O. Louscou-Bozapalidou.
8. **Automata on Directed Graphs for the Recognition of Assembly Lines**, *Communications in Computer and Information Science* 383, 485-495, 2013, with S. Spartalis and L. Iliadis.
9. **Fuzzy Graph Language Recognizability**, *Advances in Information and Communication Technology* 381, 196–205, 2012, with S. Spartalis and L. Iliadis.
10. **Directed Graphs Representing Isomorphism Classes of C-Hypergroupoids**, *Ratio Mathematica* 23, 51-64, 2012 with S. Spartalis and K. Skoulariki.
11. **Random walk on graphs: An application to the double diffusivity model**, *Mechanics Research Communications* 43, 101-104, 2012 with E.C. Aifantis.
12. **Pattern Language Recognition and Generation**, *Pure Mathematics and*

Applications 44, 257-279, 2010, with S. Bozapalidis.

15. **On the Complexity of the Syntax of Tree Languages**, *Lecture Notes in Computer Science* 5725, 189-203, 2009, with S. Bozapalidis.
16. **Graph Automata**, *Theoretical Computer Science* 393, 147-165, 2008 with S. Bozapalidis.
17. **The Syntactic Complexity of Eulerian Graphs**, *Lecture Notes in Computer Science* 4728, 208-217, 2007.
18. **Recognizability of Graph and Pattern Languages**, *Acta Informatica* 42, 553-581, 2006, with S. Bozapalidis.
19. **Automata on Patterns and Graphs**, *Proceedings of the 1st International Conference of Algebraic Informatics, CAI05*, 31-51, Thessaloniki, Greece, 2005, with S. Bozapalidis.
20. **An Axiomatization of Graphs**, *Acta Informatica* 41, 19-61, 2004, with S. Bozapalidis.
21. **A Finite Complete Set of Equations Generating Graphs**, *Lecture Notes in Computer Science* 2731, 118-128, 2003, with S. Bozapalidis.

Προγράμματα

Ερευνητικά Προγράμματα Σ.Σπάρταλη:

A. Ερευνητικά Προγράμματα - Επιστημονικός Υπεύθυνος:

A.1 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο "Συμβολή στη μελέτη των ασθενώς προσεταιριστικών ημι-υπερομάδων". Κωδικός έργου Κ.Ε..678. Χρηματοδότης ΤΣΜΕΔΕ -Επιτροπή Ερευνών Δ.Π.Θ.

A.2 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο "Επί του πλήθους των S-Hv-ημιομάδων". Κωδικός έργου Κ.Ε.768.Χρηματοδότης ΤΣΜΕΔΕ -Επιτροπή Ερευνών Δ.Π.Θ.

A.3 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο "Συμβολή στη μελέτη των μερικώς ορισμένων (αντίστοιχα, ολικώς ορισμένων) υπερομαδοειδών". Κωδικός έργου Κ.Ε.1605, Χρηματοδότης ΤΣΜΕΔΕ -Επιτροπή Ερευνών Δ.Π.Θ.

A.4 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο "Μερικώς ορισμένες Υπερδομές και Ευφυή συστήματα εκτίμησης κινδύνου με Ασαφή Άλγεβρα". Κωδικός έργου Κ.Ε.1964, Χρηματοδότης ΤΣΜΕΔΕ -Επιτροπή Ερευνών Δ.Π.Θ.

A.5 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο "Υπερδομές και Μετασχηματισμοί Γραφημάτων". Κωδικός έργου Κ.Ε.80870/2155. Χρηματοδότης ΤΣΜΕΔΕ -Επιτροπή Ερευνών Δ.Π.Θ.

A.6 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο "Μαθηματικά μοντέλα ανάλυσης δεδομένων φασματοσκοπίας, Υπερσυνθετικές δομές". Κωδικός έργου Κ.Ε.80957/2229. Χρηματοδότης ΤΣΜΕΔΕ -Επιτροπή Ερευνών Δ.Π.Θ.

A.7 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο "Υπερσυνθετικές δομές-διοργάνωση διεθνούς συνεδρίου". Κωδικός έργου Κ.Ε.80972/2245. Χρηματοδότης ΤΣΜΕΔΕ -Επιτροπή Ερευνών Δ.Π.Θ.

A.8 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο «Βελτίωση των υποδομών και των λειτουργιών του Τμήματος Μηχανικών Παραγωγής και Διοίκησης». Κωδικός έργου Κ.Ε.80966/2247. Χρηματοδότης ΤΣΜΕΔΕ -Επιτροπή Ερευνών Δ.Π.Θ.

B. Ερευνητικά Προγράμματα - Επιστημονικός Συνυπεύθυνος:

B.1 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με τίτλο "Μικροβιακά νοσήματα καλλιεργούμενων ευρύαλων ψαριών και προτεινόμενες λύσεις: Πολυκεντρική Μελέτη". Κωδικός έργου Κ.Ε. Χρηματοδότης ΥΠΟΥΡΓΕΙΟ ΑΓΡΟΤΙΚΗΣ ΑΝΑΠΤΥΞΗΣ ΚΑΙ ΤΡΟΦΙΜΩΝ. Επιχειρησιακό Πρόγραμμα «ΑΛΙΕΙΑ 2000-

2006». Μέτρο 4.6 (Καινοτόμα μέτρα).

Γ. Ερευνητικά Προγράμματα - Μέλος Ερευνητικής Ομάδας:

Γ.1 Χρηματοδοτούμενο ερευνητικό πρόγραμμα ΠΡΕΝΕΔ με θέμα "Γεωμετρικές υπερδομές και εφαρμογές τους". Χρηματοδότης Επιτροπή Ερευνών Δ.Π.Θ.

Γ.2 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με θέμα «Επικοινωνία και Νέες Τεχνολογίες» στα πλαίσια της Κοινοτικής Πρωτοβουλίας INTERREG III C/ZONE SUD- Πρόγραμμα PAGUS (Υποπρόγραμμα 4). ΚΕ 1351. Χρηματοδότης ΕΟΚ- Επιτροπή Ερευνών Δ.Π.Θ.

Γ.3 Χρηματοδοτούμενο ερευνητικό πρόγραμμα με θέμα «Βελτιστοποίηση της ποιότητας των γαλακτοκομικών προϊόντων με την εφαρμογή νέων τεχνολογιών και την διαμόρφωση αυτοματοποιημένων μοντέλων διαχείρισης» Κωδικός Έργου ΚΕ 1496, Μέτρο 2.1 του Π.Ε.Π. Ανατολικής Μακεδονίας Θράκης. Χρηματοδότης Ευρωπαϊκή Ένωση κατά 42% και Ελληνικό Δημόσιο κατά 18%.

Δ. Προγράμματα ΕΠΕΑΕΚ - Μέλος Ερευνητικής Ομάδας:

Δ.1 Χρηματοδοτούμενο πρόγραμμα ΕΠΕΑΕΚ με θέμα : "Σχεδιασμός, Οργάνωση και Εφαρμογή ειδικού επιμορφωτικού προγράμματος για την ακαδημαϊκή και επαγγελματική αναβάθμιση των εκπαιδευτικών της πρωτοβάθμιας εκπαίδευσης". Χρηματοδότης Υ.Π.Ε.Π.Θ.-ΕΥΡΩΠΑΪΚΗ ΕΝΩΣΗ.

Δ.2 Χρηματοδοτούμενο πρόγραμμα ΕΠΕΑΕΚ (ΕΚΤ) με θέμα : "Άλγεβρα και Ανάλυση για Μαθηματικούς. Επαγγελματική κατάρτιση με εκπαιδευτική Τεχνολογία και Μεθοδολογία. Σύγχρονες εξελίξεις". Χρηματοδότης Υ.Π.Ε.Π.Θ.-ΕΥΡΩΠΑΪΚΗ ΕΝΩΣΗ.

Δ.3 Χρηματοδοτούμενο πρόγραμμα ΕΠΕΑΕΚ(ΕΚΤ) με θέμα: "Αναμόρφωση του Προπτυχιακού Προγράμματος Σπουδών του Τμήματος Αγροτικής Ανάπτυξης του Δ.Π.Θ.". Χρηματοδότης Υ.Π.Ε.Π.Θ.-ΕΥΡΩΠΑΪΚΗ ΕΝΩΣΗ.

Ερευνητικά Προγράμματα Σ.Κατσαβούνη :

A. Ερευνητικά Προγράμματα - Επιστημονικός Υπεύθυνος:

1. Δ.Π.Θ. – Επιτροπή Ερευνών, "Δρομολόγηση διεργασιών σε συστήματα παραγωγής με περιορισμούς διαθεσιμότητας και συμβατότητας". Επιστημονικός Υπεύθυνος. Διάρκεια 15/6/2007 – 14/6/2011.
2. Δ.Π.Θ. – Επιτροπή Ερευνών, "Αλγόριθμοι δρομολόγησης σε εφοδιαστικές αλυσίδες με χρήση χρονικών παραθύρων". Επιστημονικός Υπεύθυνος. Διάρκεια 15/2/2009 - 15/12/2011.
3. Δ.Π.Θ. - Επιτροπή Ερευνών, "Αλγόριθμοι Επεξεργασίας Δεδομένων για την Εκτίμηση των Παραμέτρων της Δομής Υλικών με μη Καταστροφικές Μεθόδους". Επιστημονικός Υπεύθυνος. Διάρκεια 1/11/2009 - 28/2/2013.
4. Δ.Π.Θ. – Επιτροπή Ερευνών, "Υλοποίηση Αλγορίθμων και Υπολογιστικών Μεθόδων Ανάλυσης Φασμάτων Κεραμικών Υλικών με Τεχνικές SR-XRF & SR-XRD". Επιστημονικός Υπεύθυνος. Διάρκεια 1/3/2012 - 28/2/2014.
5. Δ.Π.Θ. – Επιτροπή Ερευνών, "Αλγόριθμοι Δυναμικού Χρονοπρογραμματισμού στη Διαχείριση Έργων". Επιστημονικός Υπεύθυνος. Διάρκεια 1/3/2012 - 28/2/2014.
6. Δ.Π.Θ. – Δομή Απασχόλησης & Σταδιοδρομίας (Δ.Α.ΣΤΑ). Επιστημονικός Υπεύθυνος από 1-9-2012.

B. Ερευνητικά Προγράμματα - Επιστημονικός Συμπεύθυνος:

1. NMI3 - EU 6th Framework Programme (FP6): "A PGAA study of archaic pottery from Lithochori Greece", Scientific Area: Material Engineering, I.Siouris, S.Katsavounis, K.Kosmidou - Dept. of Production and Management Eng. DUTH, Ralph Gilles-TU Munchen. Proposal No. 3510, approved September 2009.
2. NMI3 - EU 6th Framework Programme (FP6): "Non Destructive Elemental evaluation of Bronze/Silver Greco- Roman Coins and artefacts with an approximate dating of the 1st century AD using PGAA", Scientific Area: Material Engineering, I.Siouris, S.Katsavounis, K.Kosmidou - Dept. of Production and Management Eng. DUTH. Proposal No. 3509, approved September 2006.
3. NMI3 - EU 6th Framework Programme (FP6): "Neutron diffraction measurements on the

Γ. Ερευνητικά Προγράμματα - Μέλος Ερευνητικής Ομάδας:

1. Α.Τ.Ε.Ι.Θ. – Ειδικός Λογαριασμός Κονδυλίων & Έρευνας Επιτροπής Ερευνών, "Επόπτης ΚΕΠΙΣ Τμήματος Πληροφορικής ΤΕΙΘ – Δ' Περίοδος Πιστοποιήσεων 2005, Α' Περίοδος Πιστοποιήσεων 2006 (20/10/05 – 16/4/06) " στο έργο "Πιστοποίηση Δεξιοτήτων Εκπαιδευτικών – Κέντρου Πιστοποίησης (ΚΕ.ΠΙΣ.) του τμήματος Πληροφορικής".
2. ΙΤΣΑΚ, "Μελέτη αποτίμησης του κινδύνου ρευστοποίησης και κινηματικής αλληλεπίδρασης πασσάλων θεμελίωσης – εδάφους στη γέφυρα του ποταμού Νέστου Α/Κ ΧΡΥΣΟΥΠΟΛΗΣ – ΝΕΣΤΟΣ (τμήμα 14.1.2) της Εγνατίας οδού". Σύμβαση για τον σχεδιασμό και ανάπτυξη συστήματος διαχείρισης, αποθήκευσης και επεξεργασίας γεωλογικών, γεωφυσικών, γεωτεχνικών και εδαφομηχανικών δεδομένων. Διάρκεια: 1/9/2002 -28/2/2003.
3. Γ' ΚΠΣ, Επιχειρησιακό Πρόγραμμα Ανταγωνιστικότητα, Μέτρο 8.2, Δράση 2, Περιφέρεια Κεντρικής Μακεδονίας, Εκπαιδευτική στήριξη του Προγράμματος "Δικτυωθείτε". Έργο : Ανάπτυξη Πληροφοριακού Συστήματος. Δύο συμβάσεις έργου. Διάρκεια: 17/12/2001 - 31/12/2002..
4. INTERREG II, Μέτρο 6.2, ΕΝΕΡΓΕΙΑ Δ. Διάρκεια 1/3/2001 - 31/10/2001.
 - Συμμετοχή σε ομάδα παραγωγής 8 εκπαιδευτικών τίτλων πολυμέσων
 - Παραγωγή ηλεκτρονικών μαθημάτων

Δ. Προγράμματα ΕΠΕΑΕΚ - Μέλος Ερευνητικής Ομάδας:

1. Δ.Π.Θ. – Ειδικός Λογαριασμός Ερευνών, ΕΠΕΑΕΚ II, "Προγράμματα Προπτυχιακών Σπουδών του Δ.Π.Θ.", Υποέργο 10, Ανάπτυξη και προσαρμογή έντυπου και ηλεκτρονικού εκπαιδευτικού υλικού, Διάρκεια 1/6/2003 – 31/8/2008.
2. Α.Π.Θ. – Επιτροπή Ερευνών, ΕΠΕΑΕΚ II, "Αναμόρφωση Προπτυχιακού Προγράμματος Σπουδών Μηχανολόγων Μηχανικών Α.Π.Θ. ", Παροχή Εκπαίδευσης, Διάρκεια: 1/6/2008-30/6/2008.
3. Πανεπιστήμιο Μακεδονίας –Επιτροπή Ερευνών, ΕΠΕΑΕΚ II, έργο "Αναμόρφωση Προπτυχιακών Προγραμμάτων Σπουδών του Πανεπιστημίου Μακεδονίας", τίτλος υποέργου: "Κεντρικές Δράσεις - Αυτεπιστασία", για την οριζόντια δράση 9. Σύμβαση για την εξειδικευμένη υποστήριξη στη διαχείριση του προϋπολογισμού του έργου. Διάρκεια: 1/6/2004 – 31/12/2004.
4. Τ.Ε.Ι.Θ. – Επιτροπή Ερευνών, ΕΠΕΑΕΚ, "Ενίσχυση Σπουδών Πληροφορικής στο Τ.Ε.Ι. Θεσσαλονίκης", Μέτρο 2.2, "Αναμόρφωση Προγραμμάτων Σπουδών - Διεύρυνση". Διάρκεια: 1/1/2003 – 31/12/2004.
 - Οργάνωση, Αξιολόγηση και Αναμόρφωση του νέου Π.Π.Σ.
 - Ανάπτυξη Εκπαιδευτικού Υλικού για Διανομή και Χρήση στο Διαδίκτυο
 - Ανάπτυξη, Οργάνωση, Διεξαγωγή Αξιολόγηση Εργαστηρίων από απόσταση
5. Πανεπιστήμιο Μακεδονίας –Επιτροπή Ερευνών, Γ' ΚΠΣ, Έργο Ε42: "Επιμόρφωση Επιμορφωτών Στα Νέα Δικτυακά και Υπολογιστικά Συστήματα - ΕΠΕΑΕΚ". Σύμβαση έργου με αντικείμενο "Ενισχυτική Διδασκαλία". Διάρκεια 17/9/2001 – 31/10/2001.
6. Πανεπιστήμιο Μακεδονίας, ΕΠΕΑΕΚ, 1997-1999, ενέργεια 3.1.α, "Πρόγραμμα σπουδών – συγγράμματα", Τμήμα Εφαρμοσμένης Πληροφορικής, "Αναμόρφωση του προγράμματος σπουδών με την εισαγωγή παραστατικών εκπαιδευτικών μεθόδων". Διάρκεια 1/1/1999 - 29/2/2000.
 - ΠΕ2.2. Παραγωγή διδακτικού υλικού μαθημάτων hardware και συστημάτων.
 - ΠΕ3.3. Τεχνική υποστήριξη της αξιολόγησης του προγράμματος από εξωτερικούς επιστήμονες.

Διεθνή συνέδρια

Διεθνή συνέδρια Σ.Σπάρταλη:

- 1983 SEVENTH BALKAN MATHEMATICAL CONGRESS (B.U.M.), Athens, Greece, Dec. 19-23.
1986 INTERNATIONAL CONFERENCE COMBINATORICS'86, Passo della Mendola, Italy, June 30-July 5.
1988 CONFERENCE ON ALGEBRAIC LOGIC, JANOS BOLYAI MATHEMATICAL SOCIETY, Budapest, Hungary,

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- Aug. 8-14.
- 1990 FOURTH INTERNATIONAL CONGRESS ON ALGEBRAIC HYPERSTRUCTURES AND APPLICATION (AHA), Xanthi, Greece, June 27-30.
- 1990 ΣΕΜΙΝΑΡΙΟ ΠΛΗΡΟΦΟΡΙΚΗΣ, Δελφοί, Οργάνωση: Ευρωπαϊκό Κέντρο Δελφών και Université P. Et M. Curie (Paris VI), Σεπ. 15-16.
- 1991 CONFERENCE ON DISIGNES, STEINER SYSTEMS AND HYPERSTRUCTURES, Milazzo Sicily, Italy, Sept.. 26-29.
- 1992 THE FIRST EUROPEAN CONGRESS OF MATHEMATICS E.C.M., Paris, France, July 6-10.
- 1992 THIRD INTERNATIONAL CATANIA CONFERENCE, COMBINATORICS' 92, Acireale, Italy, Sept.. 6-13.
- 1993 FIFTH INTERNATIONAL CONGRESS ON ALGEBRAIC HYPERSTRUCTURES AND APPLICATIONS (AHA), Iasi, Romania, July 4-10.
- 1993 INTERNATIONAL SYMPOSIUM ON HYPERSTRUCTURES AND THEIR APPLICATIONS, Thessaloniki, Greece, Nov. 11-13.
- 1994 INTERNATIONAL CONFERENCE ON INCIDENCE GEOMETRIES AND COMBINATORIAL STRUCTURES, COMBINATORICS'94, Roma & Mondesilvano (PE), Italy, Sept.10-16.
- 1995 I.R.B. INTERNATIONAL WORKSHOP 1995, Monderoduni (IS), Molise, Italy, August 7-13.
- 1995 INTERNATIONAL SYMPOSIUM ON HYPERSTRUCTURES AND THEIR APPLICATIONS IN CRYPTOGRAPHY, GEOMETRY AND PROBABILITY, Pescara, Italy, Sept. 29 - Oct. 2.
- 1995 WORKSHOP ON GLOBAL ANALYSIS, DIFFERENTIAL GEOMETRY AND LIE ALGEBRAS, Thessaloniki, Greece, Dec. 13-16.
- 1996 SIXTH INTERNATIONAL CONGRESS ON ALGEBRAIC HYPERSTRUCTURES AND APPLICATIONS (AHA), Prague, Czech Republic, Sept. 1-7.
- 1996 COMBINATORICS'96 in honor of Giuseppe Tallini, Assisi (Perugia), Italy, Sept. 8 -14.
- 1996 WORKSHOP ON GLOBAL ANALYSIS, DIFFERENTIAL GEOMETRY AND LIE ALGEBRAS, Thessaloniki, Greece, Oct. 21 -25.
- 1997 INTERNATIONAL CONGRESS IN ALGEBRAS AND COMBINATORICS, Hong Kong, August 19 - 23.
- 1998 DIFFERENTIAL GEOMETRY, GLOBAL ANALYSIS AND LIE ALGEBRAS, Aristotle University of Thessaloniki, Greece, June 24 -27.
- 1999 7th INTERNATIONAL CONGRESS ON ALGEBRAIC HYPERSTRUCTURES AND APPLICATIONS, Palazzo dei Duchi di Santo Stefano, Taormina, Italy, June 13-19.
- 1999 CONFERENCE ON THE GEOMETRY AND ITS APPLICATIONS IN TECHNOLOGY, Aristotle University of Thessaloniki, Greece, June 23 -27.
- 2000 INTERNATIONAL CONGRESS "Constantin Caratheodory in his ... origins", Democritus University of Thrace, Vissa-Orestiada, Greece, September 1-4.
- 2000 8^ο Πανελλήνιο Συνέδριο Μαθηματικής Ανάλυσης, Δημοκρίτειο Πανεπιστήμιο Θράκης, Ξάνθη, Σεπτέμβριος 29-30.
- 2001 TENTH INTERNATIONAL COLLOQUIUM ON NUMERICAL ANALYSIS AND COMPUTER SCIENCE WITH APPLICATIONS, Plovdiv, Bulgaria, August 12-17.
- 2002 4^ο Πανελλήνιο Συνέδριο Άλγεβρας και Θεωρίας Αριθμών (με διεθνή συμμετοχή), Πανεπιστήμιο Πατρών - Σχολή Θετικών Επιστημών, Πάτρα, Ελλάδα, Μάιος 30- Ιούνιος 2.
- 2002 4th INTERNATIONAL CONFERENCE ON GEOMETRY AND IT'S APPLICATIONS IN TECHNOLOGY, Balkan Society of Geometers, Aristotle University of Thessaloniki-Greece, 25-29 June.
- 2002 8th INTERNATIONAL CONGRESS ON ALGEBRAIC HYPERSTRUCTURES AND APPLICATIONS, AHA2002, Democritus University of Thrace, Samothraki - Greece, 1-9 September.
- 2003 INTERNATIONAL CONFERENCE OF COMPUTATIONAL METHODS IN SCIENCES AND ENGINEERING (ICCMSE 2003), Kastoria-Greece, 12-16 September.
- 2004 1^ο Πανελλήνιο Περιβαλλοντικό Συνέδριο: "Σύγχρονα περιβαλλοντολογικά θέματα", Δημοκρίτειο Πανεπιστήμιο Θράκης, Ν.Ορεσιάδα, 7 έως 9 Μαΐου.
- 2004 INTERNATIONAL CONFERENCE OF NUMERICAL ANALYSIS AND APPLIED MATHEMATICS (ICNAAM 2004), Chalkis-Greece, 10-14 September.
- 2004 INTERNATIONAL CONFERENCE OF COMPUTATIONAL METHODS IN SCIENCES AND ENGINEERING (ICCMSE2004), Vouliagmeni-Kavouri, Greece, 19-23 November.
- 2005 INTERNATIONAL CONFERENCE OF NUMERICAL ANALYSIS AND APPLIED MATHEMATICS (ICNAAM 2005), Rodos-Greece, 16-20 September.
- 2005 INTERNATIONAL CONFERENCE OF COMPUTATIONAL METHODS IN SCIENCES AND ENGINEERING (ICCMSE2005), Loutraki-Korinthos, Greece, 21-26 October.
- 2006 INTERNATIONAL CONFERENCE "SUSTAINABLE MANAGEMENT AND DEVELOPMENT OF MOUNTAINOUS AND ISLAND AREAS" Naxos-Greece, Sept. 29, 30 and October 1.
- 2006 INTERNATIONAL CONFERENCE OF COMPUTATIONAL METHODS IN SCIENCES AND ENGINEERING (ICCMSE2006), Xania-Crete, Greece, 27 October – 1November.
- 2006 10^ο Πανελλήνιο Επιστημονικό Συνέδριο Ελληνικής Υδροτεχνικής Ένωσης, «Διαχείριση Υδατικών Πόρων και προστασία περιβάλλοντος-Σύγχρονες θεωρήσεις- Προβλήματα και προοπτικές», Ξάνθη 13-16 Δεκεμβρίου 2006.
- 2007 10th INTERNATIONAL CONFERENCE ON ENGINEERING APPLICATIONS ON NEURAL NETWORKS (EANN), Thessaloniki, Greece, 29-31 August.
- 2007 INTERNATIONAL CONFERENCE OF COMPUTATIONAL METHODS IN SCIENCES AND ENGINEERING (ICCMSE2007), Corfu, Greece, 25 - 30 September.
- 2008 10th INTERNATIONAL CONGRESS OF ALGEBRAIC HYPERSTRUCTURES AND APPLICATIONS (AHA2008), Brno-Czech Republic, September 3-9.
- 2009 AIAI 5TH IFIP CONFERENCE ON ARTIFICIAL INTELLIGENCE APPLICATIONS & INNOVATIONS, Thessaloniki, Greece, April 23-25.
- 2009 11th INTERNATIONAL CONFERENCE ON ENGINEERING APPLICATIONS ON NEURAL NETWORKS (EANN2009), London, United Kingdom, 27-29 August.
- 2010 6th IFIP (International Federation for Information Processing) Conference on Artificial Intelligence Applications &

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- 2011 Innovations (AIAI 2010), Larnaka, Cyprus, 6-7 October.
 12th EANN / 7th AIAI Joint Conferences, Engineering Applications of Neural Networks / Artificial Intelligence Applications and Innovations, 15 - 18 September 2011, Corfu, Greece.
- 2011 11th INTERNATIONAL CONGRESS OF ALGEBRAIC HYPERSTRUCTURES AND APPLICATIONS (AHA2011), Universita degli Studi "G. d'Annunzio" Cheti - Pescara – ITALY, October 16-21.
- 2012 8th AIAI 2012 Conference on Artificial Intelligence Applications & Innovations (AIAI 2010), Chalkidiki-Greece, September 27-30.
- 2013 14th EANN Conference, Engineering Applications of Neural Networks (International Neural Network Society), 13 - 16 September 2013, Halkidiki, Greece.
- 2013 9th AIAI 2012 Conference on Artificial Intelligence Applications & Innovations (AIAI 2013), Paphos, Cyprus, September 30-October 2.

Διεθνή συνέδρια Σ.Κατσαβούνη:

1. NINMACH 2013, 1st International Conference on Neutron Imaging and Neutron Methods in Archaeology and Cultural Heritage Research, September 9-12 2013, Technische Universität München, Garching, Germany.
2. 10th Balkan Conference on Operational Research, Thessaloniki, Greece, September 22-24, 2011.
3. 16th International Symposium on Inventories, Budapest, Hungary, August 23-27 2010.
4. 15th International Symposium on Inventories, Budapest, Hungary, August 22-26 2008.
5. 3rd IEEE International Conference on Information & Communication Technologies: from Theory to Applications, ICTTA'06, Damascus, Syria April 7-11 2008.
6. 2nd IEEE International Conference on Information & Communication Technologies: from Theory to Applications, ICTTA'06, Damascus, Syria April 24-28 2006.
7. 2nd International Conference on Accounting and Finance in Transition, Kavala, 9-11th July 2004.
8. 6th Balkan Conference on Operational Research, Thessaloniki, 22-25 May 2002.
9. Eurogen 2001, Evolutionary Methods for Design, Optimization and Control with Applications to Industrial Problems, Athens, September 19-21, 2001.
10. 11th International Symposium of Inventories. Budapest, August 2000.
11. 4th Hellenic - European Conference on Computer Mathematics and its Applications, Athens, September 1998.
12. 47th Meeting of the European Working Group "Multicriteria Aid for Decisions", Thessaloniki, March 1998.
13. 4th Balkan Conference on Operational Research, Thessaloniki, October 1997.
14. 3rd Balkan Conference on Operational Research, Thessaloniki, October 1995.

Αναφορές

Στο δημοσιευμένο ερευνητικό έργο του εργαστηρίου αναφέρονται οι κάτωθι ερευνητές – επιστήμονες :

Στην εργασία J.1 αναφέρονται οι κάτωθι:

1. CORSINI Piergiulio, "Prolegomena of hypergroup theory", Aviani Editore 1992.

Στην εργασία J.2 αναφέρονται οι κάτωθι:

1. BAYON R., LÉGER'S N., "Les hypergroupes d'ordre 3", Italian Journal of Pure and Applied Mathematics, 2006.
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Στην εργασία J.3 αναφέρονται οι κάτωθι:

1. AMERI R., SHAFIYAN N., "Fuzzy prime and primary hyperideals of hyperrings" Advances in Fuzzy Mathematics, Volume : 2, Issue : 1& 2 (2007).
2. CORSINI Piergiulio, "Prolegomena of hypergroup theory", Aviani Editore 1992.
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4. DAVVAZ B., SALASI A., "A realization of hyperrings", Communications in Algebra, Vol.34, Issue12, p.4389-4400 (2006).
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8. ZAHEDI MOHAMMAD MAHDI and AMERI REZA, "On Fuzzy Multiplicative Hyperideals", VI IFSA World Congress, Sao Paulo, Brazil, Voll. II., (1995), 447-450.
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- 3.GUTSAN Cornelia, "Les hypergroupes et les Hv-groupes tres fins", Rivista di Matematica pura ed Applicata, N.15 (1994), 111-127.
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- 5.GUTSAN Cornelia, "Extensions des semigroupes associees a certains semihypergroupes tres fins", Sixth int. Congress on AHA, Dem. Univ. of Thrace Press 1996, p.43-52.
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46. VOUGIOUKLIS Thomas, "Hv-modulus with external P-hyperoperations", Algebraic hyperstructures and Appl., Hadronic Press USA, p.191-197, 1994.
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54. RASOULI S., HEIDARI D. And DAVVAZ B., "β-relations on implicative bounded hyper BCK-algebras", Hacettepe Journal of Mathematics and Statistics, Volume 39(4), p.461-469, 2010
55. AMERI R., NOZARI T., "Term Functions and Fundamental Relation of Fuzzy Hyperalgebras", Ratio Matematica. No 20, p. 43-65, 2010.
56. GHADIRI M., WAPHARE B., "n-ary P-Hv-Groups", Journal of Appl. Math. & Informatics, No 5-6, p. 945-959, 2008
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8. DAVVAZ B., "Isomorphism Theorems of Hyperrings" Indian Journal of Pure and Applied Mathematics, 35(3), p.321-331, 2004.
9. DAVVAZ B., "A Brief Survey of the Theory of Hv-structures", Proc. of 8th Internat. Congress AHA2002 (Algebraic Hyperstructures and Applications), p.39-70 (2003).
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11. DAVVAZ B., DUDEK W.A., "Intuitionistic fuzzy Hv-ideals", International Journal of Mathematics and Mathematical Sciences, Vol.2006, p. 1-11, 2006.
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Στην εργασία J.9 αναφέρονται οι κάτωθι:

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Στην εργασία J.10 αναφέρονται οι κάτωθι:

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Στην εργασία J.11 αναφέρονται οι κάτωθι:

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Στην εργασία J.13 αναφέρονται οι κάτωθι:

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