

# Nicholas P. Karampetakis

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## ***PERSONAL***

**Name :** Nicholas P. Karampetakis  
**Birth Date :** December 28, 1967  
**Place of Birth :** Drama, GREECE  
**Mailing Address :** Department of Mathematics  
(Office) Aristotle University of Thessaloniki  
Thessaloniki 54124, Greece  
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## ***EDUCATIONAL BACKGROUND***

**B. Sc. in Mathematics** Department of Mathematics, Aristotle University  
**(with excellence)** Thessaloniki, Thessaloniki 54006, GREECE  
**1985-1989**

**Ph. D. in Mathematics** Department of Mathematics, Aristotle University  
**(with excellence)** Thessaloniki, Thessaloniki 54006, GREECE  
**1989-1993**

**Postgraduate studies in** Greek Open University, Patra, Greece.  
**Open and Distance**  
**Learning**  
**(with excellence)**  
**1999**

## ***CURRENT JOB RESPONSIBILITIES***

Associate Professor, Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece (2000 – today).

Educator, Department of Informatics, Greek Open University, Patras, Greece.

## ***EMPLOYMENT RECORD***

**15/7/2009 - today** Associate Professor, Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece.

|                              |   |
|------------------------------|---|
| <b>1/1/2002 – now</b>        | Part time academic staff, Department of Informatics, Greek Open University, Patras, Greece.                           |
| <b>17/8/2000 – 15/7/2009</b> | Assistant Professor, Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece.           |
| <b>1/12/94-31/8/1998</b>     | Research Associate (Grade 1A), Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece. |
| <b>1/10/96 – 1/2/99</b>      | Research Assistant, Technological Institute of Kavala, Kavala, Greece.  |
| <b>1/9/95 – 16/8/2000</b>    | Computer Educator in High School.   |
| <b>1/11/94-1/9/95</b>        | Research Associate (Grade 1A), Department of Mathematical Sciences, Loughborough University of Technology.            |
| <b>1/9/91 – 30/5/93</b>      | Teaching Assistant, Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece.            |

## ***TEACHING EXPERIENCE***

|                           |  |
|---------------------------|--|
| <b>1/9/91 – 30/5/93</b>   | Exercises in Classical and Modern Control Theory, Department of Mathematics, Aristotle University of Thessaloniki  |
| <b>1/9/90 - 30/5/93</b>   | Supervisor's Assistant to student's research projects in Linear System Theory  |
| <b>1/11/94-now</b>        | Supervisor's Assistant to Ph.D. student's research projects in Linear System Theory (P. Tzekis, E. Antoniou and S.Vologiannidis in the Department of Mathematics, Aristotle University of Thessaloniki – S. Mahmood and J. Jones in the Department of Mathematical Sciences , Loughborough University of Technology).<br>Supervisor to 4 Ph. D. Students (Varsamis Dimitrios, Grigoriadou Anastasia, Karathanasi Sofia, Pechlivanidou Georgia). Supervisor to 26 M.Sc. students that had already finished. |
| <b>1/12/94-31/8/1998</b>  | Computer Programming I, Computer Programming II, Department of Mathematics, Aristotle University of Thessaloniki.  |
| <b>1/9/95 – 17/8/2000</b> | Computer Educator in Secondary Education.  |

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|--|---|---|
| 1/10/96 – 1/7/97<br>22/9/97 – 1/7/98<br>26/9/98 – 1/2/99 |   | Introduction to Computers, Introduction to Programming, Technological Institute of Kavala, Greece.  |
| 11/99 – 12/99  |   | Responsible for the organization of an introductory course to “New Technologies in Mathematics” for Mathematicians, sponsored by the Greek Government.  |
| 17/8/2000<br>1/9/2002                                    | – | The Programming Language Pascal, Computer Programming II (Fortran), Department of Mathematics, Aristotle University of Thessaloniki.  |
| 1/10/2002 – now  |   | <p><b>Undergraduate Courses</b><br/>Symbolic Programming Languages (with Mathematica), Introduction to Computer Programming (with Fortran 90/95)</p> <p><b>Postgraduate Courses</b><br/>Computer aided analysis and synthesis of linear systems, Optimal Control, Discrete Time Systems, Analysis and Synthesis of Linear Multivariable Systems.</p> <p>Supervisor in 26 finished M.Sc. thesis, 4 undergoing Ph.D. thesis and 3 undergoing M.Sc. thesis (all in Control Theory). Internal examiner in 4 Ph.D. Thesis and 52 M.Sc. thesis (all in Control Theory).</p> <p>Department of Mathematics, Aristotle University of Thessaloniki.</p> |

## ***RESEARCH EXPERIENCE***

|                |  |  |
|----------------|--|--|
| 1991 - 1993    |  | Development of algorithms for analysis and synthesis of multivariable Control Systems. Funded by the Greek Secretariat of Research and Technology (GSRT). (No. : 1393).                                |
| 1/11/94-1/9/95 |  | Research Associate (Grade 1A), Department of Mathematical Sciences, Loughborough University of Technology.   |
| 1/1/94-1/7/97  |  | European Network for robust and Adaptive Control (EURACO). Funded by the E.U. under the Human Capital and Mobility framework. (Training & Mobility Research (TMR) Programme) (No. EOK-ERBCHRXCT930395) |

|                                |   |  |
|--------------------------------|---|--|
| <b>1/1/95 - 31/12/95</b>       |   | Analysis, Synthesis and Design of singular multivariable Automatic Control systems. Funded by GSRT under the framework of "Bilateral Cooperation between Greece and Czech Republic" (No. : 1582).  |
| <b>1/2/96 - 1/2/98</b>         |   | Development of a software package of multivariable Control Systems. Funded by GSRT - PENED 95 project. (No. : 1630).   |
| <b>1/1/1998-28/2/99</b>        |   | Postdoctoral research (sponsored by the Greek National Foundation), Department of Mathematics, Aristotle University of Thessaloniki.   |
| <b>3/11/99<br/>2/11/2001</b>   | – | Development of algorithms and of a web-based mathematical package for analysis and synthesis of multivariable Control Systems. Funded by GSRT. (No. 1974).   |
| <b>6/11/2000<br/>13/3/2000</b> | – | Software Package for industrial and educational uses on Automatic Control. Funded by Demokritos High Tech Group Ltd. (No. 20196).  |
| <b>7/5/2003<br/>7/5/2005</b>   | – | Computer aided analysis and synthesis of discrete time filters in telecommunications via contemporary polynomial matrix methods (No. 10120)  |
| <b>2006-2008</b>               |   | Development of algorithms and implementation in Mathematica for analysis and synthesis of multivariable Control Systems. "Bilateral Cooperation between Greece and Non European Community Partners ", in collaboration with a U.C. Company <i>Wolfram Research Inc.</i> and a Greek Company <i>Zenon</i> Funded by GSRT. (No. 1974). |

***International Cooperations in M.Sc. level (responsible for the ERASMUS program)***

1. Prof. Eva Zerz, Department of Mathematics, University of Kaiserslautern, Germany (now in University of Aachen)
2. Prof. N. Karcnias, Control Engineering Centre & Centre of Systems and Modelling, School of Engineering and Mathematical Sciences, CITY University, U.K.
3. Prof. K. Galkowski, Institute of Control and Computation Engineering, The University of Zielona Gora, Zielona Gora, Poland
4. Prof. M. Sebek, Department of Control Engineering, Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic
5. Prof. A.C. Pugh, Department of Mathematical Sciences, Loughborough

University, U.K.

## ***SCHOLARSHIPS – FELLOWSHIPS – SCIENTIFIC VISITS***

|   |   |
|---|---|
| <b>1995-1998</b>                            | Scholarship for undergraduate studies (Greek National Foundation).  |
| <b>1990-1993</b>                            | Scholarship for postgraduate studies (Greek National Foundation).   |
| <b>26/1/91-30/3/91</b>                      | Research studentship (British Council Office).  |
| <b>28/4/92 – 18/7/92</b>                    | Research studentship (Loughborough University of Technology).   |
| <b>1/11/94 – 1/9/95</b>                     | EPSRC Grant from the British government.  |
| <b>1/1/98 – 28/2/99</b>                     | Scholarship for postdoctoral studies (Greek National Foundation).   |
| <b>August 26 2003 – September 5 2003</b>    | Scientific visit to Zielona Gora, Poland (Greek Ministry of Education and Religion).  |
| <b>January 25, 2005 – February 10, 2005</b> | Scientific visit (ERASMUS) to Loughborough University of Technology, England.   |
| <b>July 3-8, 2005</b>                       | Scientific visit (ERASMUS) to Czech Technical University in Prague, Czech Republic.   |
| <b>July 10-15, 2005</b>                     | Scientific visit (ERASMUS) to University of Kaiserslautern, Germany.  |
| <b>22/1/2007 – 27/1/2007</b>                | Scientific visit (ERASMUS) to Loughborough University of Technology, England.   |
| <b>23/7/2007</b>                            | Scientific visit to the Department of Mathematics, Northern Illinois University where I gave the talk « <i>Linearizations of polynomial matrices with symmetries</i> ». |
| <b>24/7/2007</b>                            | Scientific visit to the Wolfram Research Inc. (Champaign, Illinois). I gave the talk : «Developing a descriptor systems package to extend Control System Professional»  |
| <b>February 2010 - March 2010</b>           | Sabbatical leave from my Department in order to work at the Department of Electrical and Computer Engineering, Democritus University of Thrace.                         |

**April 2010 - June 2010**

Sabatical leave from my Department in order to work at the Department of Electronic and Electrical Engineering, Loughborough University of Technology, England, U.K..

**December 13-17, 2010**

Scientific visit (ERASMUS) to City University, England.

## ***MEMBERSHIPS***

**1989 – 1993**

Greek Mathematical Society

**1998 – 2001**

American Mathematical Society

**1992 – now**

IEEE Control System Society

**1992 – 2001**

IEEE Education Society

**1994**

IEEE Computer Society

**1992 – 1996**

SIAM Society (Dynamical Systems Activity Group, Linear Algebra Activity Group, Control Systems Activity Group)

**1993**

Graduate member of IMA.

**1995 – 1996**

Member of the New York Academy of Sciences

**2001-now**

Member of the IFAC Technical Committee on Linear Systems.

**2003- now**

Vice-Chair to IEEE Action Group on Symbolic Methods for CACSD.

2005

Member of the International Program Committee of the 4th International Workshop on Multidimensional (nD) Systems, Wuppertal, Germany, July 10 – 13, 2005.

2005

Member of the International Program Committee of the 13th IEEE Mediterranean Conference on Control and Automation, Limassol, Cyprus, June 27-29, 2005.

2007

Member of the International Program Committee of the 3rd IFAC Symposium on System Structure and Control, Foz Do Iguacu, Brazil, October 17-19, 2007.

- 2007** Member of the International Program Committee of the *5<sup>th</sup> International Workshop on Multidimensional (nD) Systems*, Aveiro, Portugal, June 27 – 29, 2007
- 2008** Invited Session Chair of the *2008 IEEE International Symposium on Decision and Control, 2<sup>nd</sup> IEEE Multi-Conference on Systems and Control*, San Antonio, Texas, September 3-5, 2008
- 2008** Associate Editor to the journal *Multidimensional Systems and Signal Processing*.
- 2009** Member of the International Program Committee of the *17<sup>th</sup> IEEE Mediterranean Conference on Control and Automation*, Thessaloniki, Greece, June 24-26, 2009.
- 2009** General Chair of the *6<sup>th</sup> International Workshop on Multidimensional (nD) Systems*, Thessaloniki, Greece, June 29 – July 1, 2009.
- 2010** Associate Editor to the *International Journal of Applied Mathematics and Computer Science*.
- 2011** Member of the International Program Committee of the *7<sup>th</sup> International Workshop on Multidimensional (nD) Systems*, Poitiers, France, 2011.
- 2011** Senior Member of IEEE
- 2012** Publication Co-Chair, 2012 International Conference on Communications, Computing and Control Applications (CCCA'12), 12-14, 2012, Marseilles, France

## ***REVIEWER***

### **Journals**

- IEEE Transactions on Automatic Control
- International Journal of Control
- Circuit Systems and Signal Processing
- Mathematical Reviews
- Systems and Control Letters
- Linear Algebra and its Applications
- Korean Journal of Computational and Applied Mathematics
- Journal for Science
- International Journal of Systems Science.
- Journal of Circuits, Systems and Computers.
- Journal of Applied Numerical Analysis and

Computational Mathematics.

- Numerical Algorithms.
- IEEE Transactions on Circuits and Systems I
- International Journal of Applied Mathematics and Computer Science
- Journal of Computational and Applied Mathematics
- Structural and Multidisciplinary Optimization
- Multidimensional Systems and Signal Processing.
- Kybernetika.
- Asian Journal of Control.
- Journal of Applied Mathematics and Decision Sciences.
- Journal of Applied Mathematics and Computation.
- IMA Journal of Mathematical Control and Information.
- Simulation Modelling Practice and Theory.
- Mathematical Methods in the Applied Sciences
- The Arabian Journal for Science and Engineering

## **Conferences**

- 34th IEEE Conference on Decision and Control, December 13-15, 1995, New Orleans, Louisiana, U.S.A..
- 4th IEEE Mediterranean Symposium on New Directions in Control and Automation, 10-14 June, 1996, Chania, Crete, Greece.
- European Control Conference 1997, 1-4 July 1997, Brussels, Belgium.
- 36th IEEE Conference on Decision and Control, December 10-12, 1997, San Diego, CA, U.S.A..
- IFAC Conference on SYSTEM STRUCTURE AND CONTROL, Nantes, France, 8-10 July 1998.
- 6th European Control Conference 2001, 4-7 September, Porto, Portugal.
- IFAC'2002 World Congress Conference, Barcelona, Spain.
- 9th IEEE International Conference on Electronics, Circuits and Systems – ICECS 2002.
- 2002 American Control Conference.
- 11th IEEE Mediterranean Symposium on New Directions in Control and Automation, June 17-20, 2002, Rodos, Greece.
- European Control Conference, September 1-4, University of Cambridge, U.K., ECC'03
- 42th IEEE Conference on Decision and Control, December 9-12, 2003, Hawaii, USA
- 2004 American Control Conference, Boston, June, 2004.
- 12th IEEE Mediterranean Electrotechnical Conference - MELECON 2004, May 12-15, 2004.
- IFAC World Congress Prague, Prague, July 4-8, 2005.



- 13th IEEE Mediterranean Conference on Control and Automation, June 27-29, Limassol, Cyprus, 2005.
- 5th International Conference on Technology and Automation ICTA'05, October 15-16, 2005.
- IEEE International Symposium on Computer-Aided Control Systems Design CACSD'06, October 4-6, 2006, Munich Germany.
- 2006 American Control Conference, ACC'06, June 2006, Minneapolis, Minnesota, USA.
- 45th IEEE Conference on Decision and Control, CDC'06, December 2006, San Diego, CA, USA.
- 2006 American Control Conference, ACC'06, June 2006, Minneapolis, Minnesota, USA.
- 5th International Workshop on Multidimensional (nD) Systems, Aveiro, Portugal, June 27 – 29, 2007.
- 3rd IFAC Symposium on System Structure and Control, Foz Do Iguacu, Brazil, October 17-19, 2007.
- 46th IEEE Conference on Decision and Control, New Orleans, LA, USA, December 12-14, 2007.
- European Control Conference 2007, Kos, Greece, July 2-5, 2007.
- 17th IFAC World Congress, July 6-11, 2008, Seoul, Korea.
- 2008 IEEE International Symposium on Decision and Control, San Antonio, Texas, September 3-5, 2008.
- 47th IEEE Conference on Decision and Control, Fiesta Americana Grand Coral Beach, Cancun, Mexico, December 9-11, 2008
- European Control Conference 2009, Budapest, Hungary, 23-26 August, 2009.
- 17th IEEE Mediterranean Conference on Control and Automation, Thessaloniki, Greece, June 24-26, 2009.
- 6th International Workshop on Multidimensional (nD) Systems, Thessaloniki, Greece, June 29 – July 1, 2009.
- 49th IEEE Conference on Decision and Control, Atlanta, Georgia, U.S.A., December 15-17, 2010
- 18th IFAC World Congress, Milano, Italy, August 28 - September 2, 2011
- 2012, American Control Conference, Fairmont Queen Elizabeth, Montreal, Canada June 27-June 29, 2012
- Zentralblatt fur Mathematik (115 papers, 8 books)
- Mathematical Reviews (62 papers)

## Programs

- Control Systems Professional 2.1 built in Mathematica 8.0 by Wolfram Research.

## ***PARTICIPATION IN CONFERENCES AND WORKSHOPS***

- 1993**            1st IEEE Mediterranean Symposium on New Directions in Control Theory and Applications, June 21-23, 1993, Chania, Crete, GREECE
- 1994**            2nd IEEE Mediterranean Symposium on New Directions in Control Theory and Applications, June 19-22, 1994, Chania, Crete, GREECE (Co-Chairman).
- 1996**            4th IEEE Mediterranean Symposium on New Directions in Control Theory and Applications, June 10-14, 1996, Chania, Crete, GREECE (Co-Chairman).
- 1996**            EURACO Workshop on "Control of Nonlinear Systems : Theory and Applications", 13th-17th May 1996, Algarve, Portugal.
- 1997**            4rth European Control Conference, 1-4 July, 1997, Brussels, Belgium.
- 2000**            7th IEEE Mediterranean Conference on Control & Automation, July 2000, Patra, Greece.
- 2001**            1st IFAC Symposium on System Structure and Control, Prague, Czech Republic.
- 2002**            15th IFAC World Congress, Barcelona, Spain, 2002.
- 2002**            8th IEEE International Conference on Methods and Models in Automation and Robotics, 2-5 September 2002, Szczecin, Poland (invited speaker).
- 2003**            11th IEEE Mediterranean Conference on Control and Automation, 18-20 June 2003, Rhodes, Greece (Organization of two invited sessions in cooperation with Prof. Vardulakis).
- 2004**            12th IEEE Mediterranean Conference on Control and Automation, 6-9 June 2004, Kusadasi, Turkey (Organization of two invited sessions ("Computer Algebra Packages for CACSD") in cooperation with Prof. Vardulakis).
- 2005**            IFAC World Congress Prague, Prague, July 4-8, 2005
- 2005**            13th IEEE Mediterranean Conference on Control and Automation, June 27-29, Limassol, Cyprus, 2005 (Organization of two invited sessions ("Computer Algebra Packages for CACSD") in cooperation with Prof. Vardulakis)
- 2005**            4rth International Workshop on Multidimensional (nD) Systems NDS 2005, July 10-13, 2005, University of Wuppertal, Wuppertal, Germany.

- 2006** 14th IEEE Mediterranean Conference on Control and Automation, June 28-30, Ancona, Italy, 2006.
- 2006** IEEE International Symposium on System Structure and Control, October 4-6, 2006, Munich, Germany (Organization of one invited session (“Symbolic Methods”) – chairman).
- 2007** 3rd IFAC Symposium on System Structure and Control, Foz do Iguaçu, Brazil, October 17-19, 2007 (member of the International Program Committee).
- 2007** *European Control Conference 2007*, Kos, Greece, July 2-5, 2007 (Organization of two invited sessions (“Computational and Optimization Methods for Control Systems (Part I & II)”) in cooperation with Prof. Datta - chairman).
- 2008** *2008 IEEE International Symposium on Computer-Aided Control System Design (CACSD 2008)*, San Antonio, Texas, USA.
- 2009** *17th IEEE Mediterranean Conference on Control and Automation*, Thessaloniki, Greece, June 24-26, 2009 (member of the International Program Committee).
- 2009** *6<sup>th</sup> International Workshop on Multidimensional (nD) Systems*, Thessaloniki, Greece, June 29 – July 1, 2009 (general chair).
- 2011** *7<sup>th</sup> International Workshop on Multidimensional (nD) Systems*, Poitiers, France, 2011 (Member of the International Program Committee)
- 2011** 1st International Conference on Communications, Computing and Control Applications (CCCA'11), March 3-5, 2011, Hammamet, Tunisia (Publication Co-Chair)

## ***PARTICIPATION IN THE ORGANIZATION OF INVITES SESSIONS-WORKSHOPS-CONFERENCES***

- 1) In cooperation with Prof. A. I. Vardulakis, Invited Sessions: “Advanced Numerical Methods in System and Control Theory” and “Computational Toolboxes in Control Design”, 11th Mediterranean Conference on Control and Automation MED'03 (June 17-20 2003, Rhodes, Greece).
- 2) In cooperation with Prof. A. I. Vardulakis, Invited Session: “Computational methods for CACSD”, 12th Mediterranean Conference on Control and Automation MED'04 (June 6-9 2004, Kusadasi, Turkey).
- 3) In cooperation with Prof. A. I. Vardulakis, Invited Session: “Computational methods for CACSD”, 13th Mediterranean Conference on Control and Automation MED'04 (June 26-29 2005, Lemessos, Cyprus).
- 4) In cooperation with Prof. A. I. Vardulakis, Invited Session: “Symbolic Methods”, IEEE International Symposium on Computer-Aided Control Systems Design, CACSD'06, Munich, October 2-4, 2006.
- 5) In cooperation with Prof. B. Datta, Invited Sessions: “Computational and Optimization Methods and Software for Control Systems Part i” and “Computational and Optimization Methods and Software for Control Systems Part ii”, European Control Conference 2007, ECC'07, Kos, Greece July 2-5, 2007.

- 6) Invited Session Chair of the 2008 IEEE International Symposium on Decision and Control, that will be held during the 2nd IEEE Multi-Conference on Systems and Control, September 3-5, 2008, San Antonio, Texas, U.S.A..
- 7) 2004-05, Member of the International Program Committee of the 13th IEEE Mediterranean Conference on Control and Automation, Limassol, Cyprus, June 27-29, 2005.
- 8) 2004-5, Member of the International Program Committee of the 4th International Workshop on Multidimensional (nD) Systems, Wuppertal, Germany, July 10 – 13, 2005.
- 9) 2004-05, Member of the International Program Committee of the 3rd IFAC Symposium on System Structure and Control, Foz Do Iguacu, Brazil, October 17-19, 2007.
- 10) 2006-07, Member of the International Program Committee of the 5<sup>th</sup> International Workshop on Multidimensional (nD) Systems, Aveiro, Portugal, June 27 – 29, 2007.
- 11) 2009, General Chair to the 6<sup>th</sup> International Workshop on Multidimensional (nD) Systems, Greece, June 25-27, 2009.
- 12) 2011, Member of the International Program Committee of the 7th International Workshop on Multidimensional (nD) Systems, Poitier, France, 2011.
- 13) 2011, Publication Co-Chair, 2011 International Conference on Communications, Computing and Control Applications (CCCA'11), March 3-5, 2011, Hammamet, Tunisia – 2 invited sessions in collaboration with Prof. Biswa Datta (Computational Methods for Control Systems (Part I and II)).

## **MAIN INTERESTS**

- Polynomial-Algebraic Methods for the Analysis, Synthesis and Design of Linear Time Invariant Multivariable Systems.
- Computer Aided Control Systems Design.
- Mathematical System Theory.
- Matrix Theory.
- Symbolic Computations.
- Behavior Theory.

## **CITATIONS**

1. Johnson D.S., 1993, *Coprimeless in Multidimensional System Theory and Symbolic Computation.*, Ph. D. Thesis, Loughborough University of Technology, U.K.
2. Vafiadis D., 1995, *Algebraic and Geometric Methods and Problems for Implicit Linear Systems*, Ph. D. Thesis, City University, U.K.
3. Mahmood S., 1996, *Some Structural Problems Arising in the Generalized Theory of Linear Multivariable Control Systems*, Ph. D. Thesis, Loughborough University of Technology, U.K.
4. Rafael Bru, Carmen Coll, Josep Gelonch, 1996, Periodic coprime matrix fraction decompositions, The Electronic Journal of Linear Algebra, Volume 1, pp.44-58. <http://gauss.technion.ac.il/iic/ela>.
5. F. Kraffer, 1996, Polynomial matrix to state space conversion without polynomial reduction, 4<sup>th</sup> IEEE Mediterranean Symposium on New Directions in Control and Automation, Maleme, Krete, Greece, June 10-13, 1996, ThA-1.5 (<http://med.ee.nd.edu/MED%201996/kraffer.pdf>).
6. Jones J., 1999, Ph. D. Thesis, Department of Mathematics, Loughborough University of Technology, U.K.
7. E. Antoniou, 2000, Analysis of discrete time singular systems, Ph. D. Thesis, Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece.

8. P. Tzekis, 2001, Algorithm development for analysis and synthesis of linear multivariable systems of automatic control, Ph. D. Thesis, Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece.
9. S. Vologiannidis, Algebraic - polynomial computational methods in Control Theory, Department of Mathematics, Aristotle University of Thessaloniki, Greece, 2005.
10. Galkowski Krzysztof, 1997, State-space realizations of multi-input multi-output systems-elementary operations approach., *Int. J. Control*, **66**, No.1, 119-144.
11. Galkowski Krzysztof, 1996, Elementary operations and equivalence of two-dimensional systems., *Int. J. Control*, **63**, No.6, 1129-1148.
12. A.C. Pugh, S.J. Mcinerney, M.S. Boudellioua and G.E. Hayton, 1998, Matrix pencil equivalents of a general 2-D polynomial matrix., *International Journal of Control*, **71**, No.6, pp.1027-1050.
13. Krzysztof Galkowski, 2000, State-space realizations of MIMO 2D discrete linear systems – Elementary operation and variable inversion approach, *Int. J. Control*, Vol.73, No.3, 242-253.
14. Hou, Pugh A.C. and Hayton G.E., Generalized transfer functions and input-output equivalence, *Int. J. Control*, Vol.68, No.5, 1163-1178.
15. M Hou, A C Pugh and G E Hayton, 1998, An explicit solution to generalised systems, UKACC International Conference on CONTROL '98, 1-4 September 1998, pp.1552-1557.
16. Abdel-Ghaffar K. A. S., 1998, Long division for Laurent series matrices and the optimal assignment problem, *Linear Algebra and its Applications*, 280, 189-197.
17. Tolga Guyer, Onur Kiyamaz, Goksal Bilgici and Seref Mirasyedioglu, 2001, A new method for computing the solutions of differential equation systems using generalized inverse via MAPLE, *Applied Mathematics and Computation*, 121, 291-299.
18. Krzysztof Galkowski, 2001, Minimal state space realizations for a class of linear, discrete, nD, SISO systems, *Int. J. Control*, Vol.74, No.13, pp.1279-1294.
19. Pugh A.C., Hou M. and Hayton G.E., Input-output structure and transfer equivalent polynomial representation of behavioural systems, *Proc. of the 36<sup>th</sup> IEEE CDC*, San Diego, CA, pp.3178-3183.
20. Adi Ben-Israel and T. N.E. Greville, 2003, *Generalized Inverses : Theory and Applications*, 2<sup>nd</sup> Edition.
21. H. M. Møller, Exact computation of the generalized inverse and least squares solution. *Ergebnisberichte Angewandte Mathematik Nr. 168* Universität Dortmund, 1999.
22. Ne'stor Javier Thome, 2001, *Inversas Generalizadas y su Aplicacio'n a Sistemas Singulares de Control*, Tesis Doctoral, Departamento de Matema'tica Aplicada, Universidad Polite'cnica de Valencia.
23. P. Stanimirovic, 2003, A finite algorithm for generalized inverses of polynomial and rational matrices, *Applied Mathematics and Computation*, Volume 144, Issues 2-3, 10 December 2003, Pages 199-214.
24. Vakhtang Lomadze, 2002, Rosenbrock models and their homotopy equivalence, *Linear Algebra and its Applications* 351-352: 519-532.
25. Jun Ji, 2002, A finite algorithm for the Drazin inverse of a polynomial matrix, *Applied Mathematics and Computation* 130(2-3): 243-251.
26. Gao Jing, Wang Guo-Rong, 2002, Two algorithms of Drazin inverse of a polynomial matrix, *Journal of Shanghai Teachers University (Natural Sciences)*, Vol.31, No.2, pp.31-38.
27. Henri Bourles, 2002, A new look on poles and zeros at infinity in the light of systems interconnection, *IEEE CDC 2002*, Las Vegas, Nevada, December 10-13, 2002, Paper WeP05-4.

28. Henri Bourles, 2003, Impulsive behaviours of discrete and continuous time varying systems: A unified approach, ECC'03.
29. Gałkowski K., 2001, State-space Realizations of Linear 2-D Systems with Extensions to the General nD ( $n > 2$ ) Case, Springer Verlag, LNCIS 2001.
30. Fanbin Bu and Yimin Wei, 2004, The algorithm for computing the Drazin inverses of two-variable polynomial matrices, *Applied Mathematics and Computation*, Vol.147, Issue 3, pp.805-836.
31. M.S. Boudelloua and B. Chentouf, 2003, A pencil equivalent of a general 2-D polynomial matrix, *Proceedings of the 11th Mediterranean Conference on Control and Automation*, June 18-20, Rhodes, Greece.
32. N. Munro, 2003, A polynomial control systems package, *Proceedings of the 11th Mediterranean Conference on Control and Automation*, June 18-20, Rhodes, Greece.
33. E. Antoniou and A.I. Vardoulakis, 2003, Fundamental equivalence of discrete-time AR representations, *Int. J. Control*, Vol.76, No.11, 1078-1088.
34. Predrag Stanimirovic and Milan B. Tasic, 2003, Partitioning method for rational and polynomial matrices, *Applied Mathematics and Computation* 155 (1) : 137-163.
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# PUBLICATIONS

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N. P. Karampetakis, *Notions of Equivalence for Linear Time Invariant Multivariable Systems.*, Ph. D. Thesis (No. 15), Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece.

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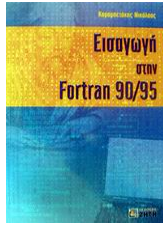
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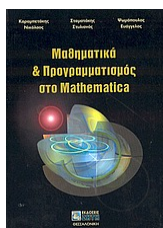
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