

## Luciano Lopez - Brief Curriculum Vitae

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DATE OF BIRTH	[REDACTED]	
CONTACT INFORMATION	Dipartimento di Matematica, University of Bari, Via Orabona 4, I 70125, Italy.	<i>Tel:</i> [REDACTED] <i>E-mail:</i> luciano.lopez@uniba.it
RESEARCH INTERESTS	Numerical methods for ODEs, Numerical geometrical integration; Evaluation of matrix functions; Lyapunov exponents evaluations; Discontinuous ODEs: theoretical aspects and numerical methods; Mimetic spatial discretization in PDEs; Numerical methods for nonlocal peridynamic models.	
POSITION	<ul style="list-style-type: none"><li>• Full Professor in Numerical Analysis, Department of Mathematics, University of Bari, (January 95-current)</li></ul>	
PREVIOUS ACADEMIC POSITIONS	<ul style="list-style-type: none"><li>• Assistant Professor, University of Bari (December, 1981 - July 1987).</li><li>• Associate Professor, University of Bari (July, 1987 - January, 1995).</li></ul>	
EDUCATION	<ul style="list-style-type: none"><li>• University of Bari, Italy, Laurea in Mathematics, March 1979.</li><li>• CNR fellowship, University of Bari (March, 1979 - December, 1981).</li></ul>	
VISITING PROFESSOR	July 1, 2006 - June 30, 2007; sabbatical year;	
VISITING	Georgia Tech Institute, Atlanta, USA: March 23-31, 2001; December 16, 2001 January 4, 2002; September 17-28, 2003; October 14-30, 2004; January, 2008; January, 2009; January, 2010, January, 2011, January, 2012, January, 2013; January, 2014, January, 2020.	
VISITING	Dept. of Math, University of Kansas, May 2007.	
ORGANIZING ACTIVITIES	<ul style="list-style-type: none"><li>• PhD Coordinator, Math Dept., University of Bari, (January 2004-2011; 2015-2016).</li><li>• Master Coordinator, Math Dept., University of Bari, (January 99- December 2003).</li><li>• Coordinator of the School in Mathematics, University of Bari, (December 2018-2022).</li><li>• Component of the scientific committee of GNCS INDAM 2013-2021.</li><li>• VQR 2015-2019: component of the subgev for the sector MAT08.</li></ul>	
PROCEEDINGS - 2002:2019	N. Del Buono, C. Elia, L. Lopez, <i>Symplectic methods based on the matrix variational equation for Hamiltonian systems</i> , P.M.A. Sloom et al. (Eds): ICCS 2002, Lecture Notes in Computer Sciences nr. 2331, Springer-Verlag Berlin, 2002, pp 526–535.	

N. Del Buono, L. Lopez. *A survey on methods for computing matrix exponentials in numerical schemes for ODEs*, P.M.A. Sloom et al. (Eds): ICCS2003, Lecture Notes in Computer Sciences nr. 2658, Part II, Springer-Verlag Berlin, 2003, pp 111–120.

N. Del Buono, L. Lopez. *A hybrid numerical technique for the solution of a class of implicit matrix differential equation* P.M.A. Sloom et al. (Eds): ICCS2004, Lecture Notes in Computer Sciences nr. 3039, Part IV, Springer-Verlag Berlin, 2004, pp. 459–466.

N. Del Buono, L. Lopez, *Geometrical integration of a class of ODEs evolving on the general linear group of matrices*. Applied and Industrial Mathematics in Italy, Vol. 69, pp. 270-281. Proceedings of the 7th Conference of SIMAI, 20-24 Settembre 2004, Venice. Editors: M. Primicerio, R. Spigler, V. Valente. World Scientific Publishing, 2005.

L. Lopez, C. Mastroserio, A. Pugliese, *Semi-explicit time-stepping methods for dynamical systems with complementary constraints*. Applied and Industrial Mathematics in Italy, Vol. 69, pp. 381-392. Proceedings of the 7th Conference of SIMAI, 20-24 Settembre 2004, Venice. Editors: M. Primicerio, R. Spigler, V. Valente. World Scientific Publishing, 2005.

L. Lopez, A. Pugliese, *Decay behaviour of functions of skew-symmetric matrices*. Lipitakis, Elias A., (Editor), HERCMA 2005, Proceedings of the 7th Hellenic-European Conference on Computer Mathematics and Applications, HERCMA 2005. Athens, Greece, September 22-24, 2005.

L. Dieci, L. Lopez, *On Filippov and Utkin sliding solutions of discontinuous systems*. In: Applied and Industrial Mathematics in Italy III. Rome, Italy, September 15-19, 2008, LONDON: World Scientific, (2009) p. 323-330.

L. Dieci, L. Lopez, *Numerical Solution of Discontinuous Differential Systems: Approaching the Discontinuity Surface from One-Side*. In: Proceedings of NumAn2010 Conference. Chania, Crete, Sept 15-18. Eds: V. Dougalis, E. Gallopoulos, pp. 61-66. ISBN/ISSN: 978-960-8475-14-4.

PUBLICATIONS ON  
SCIENTIFIC  
JOURNALS -  
2002-2020

N. Del Buono, L. Lopez, *Geometric integration on manifold of square oblique rotation matrices*, SIAM J. Matrix Anal. Appl. 23, 4, (2002) 974–989.

N. Del Buono, L. Lopez, C. Mastroserio, *Runge Kutta type methods for isodynamical matrix flows: applications to balanced realizations*, Computing 68, 3, (2002) 255-274.

L. Dieci, L. Lopez, *Lyapunov exponents of systems evolving on quadratic groups*, SIAM J. Matrix Anal. Appl. 24, 4, (2003) 1175–1185.

N. Del Buono, L. Lopez, *Differential approaches for computing Euclidean diagonal norm balanced realizations in control theory*. Future Generation Computer Systems, 19 (7), (2003), 1155-1163.

C. Elia, L. Lopez, *Exponential monotonicity of quadratic forms in ODEs and preserving methods*. Future Generation Computer Systems, 19 (7), (2003), 1187-1195.

N. Del Buono, L. Lopez, *The numerical integration of ordinary differential equations on the general linear group of matrices*, Numerical Algorithms, Vol. 34, pp 271–282, 2003.

- L. Dieci, C. Elia, L. Lopez, *Smooth SVD on the Lorentz group with application to computation of Lyapunov exponents*, J. Comput. Appl. Math. Vol. 164-165, pp. 255–264, 2004.
- M. Chu, N. Del Buono, L. Lopez, T. Politi, *On the rank approximation of data on the unit sphere*, SIAM J. Matrix Anal. Appl., Vol 27, Number 1, (2005) pp. 46-60.
- N. Del Buono, L. Lopez, R. Peluso, *Computation of exponentials of large real skew-symmetric matrices*, SIAM J. Scientific Comp. Vol. 27, No. 1, (2005) pp. 278-293.
- L. Dieci, L. Lopez, *Smooth singular value decomposition on symplectic group and Lyapunov exponents approximation*. CALCOLO, vol. 43 (2006) pp. 1-15.
- L. Lopez, V. Simoncini, *Analysis of projection methods for rational function approximation to the matrix exponential*. SIAM J. Numer. Anal. Vol. 44, No. 2, (2006) pp. 613–635.
- L. Lopez, *Numerical methods for ordinary differential equations on matrix manifolds*. J. Comput. Appl. Math. vol. 210 (2007) pp. 232-243.
- L. Lopez, V. Simoncini, *Preserving geometric properties of the matrix exponential by block Krylov subspace methods*. BIT, vol. 46 (4) (2006) pp. 813-830.
- N. Del Buono, L. Lopez, T. Politi, *Computation of function of Hamiltonian and skew-symmetric matrices*. Mathematics and Computers in Simulation, vol. 79 (4) (2008) pp. 1284-1297.
- L. Dieci, L. Lopez *Sliding Motion in Filippov Differential Systems: Theoretical Results and a Computational Approach*. SIAM J. Numer. Anal., vol. 47, (2009) pp. 2023-2051.
- L. Dieci, L. Lopez *Sliding motion on discontinuity surfaces of high co-dimension. A general construction for selection a Filippov vector field*. Numerische Mathematik, vol. 117, (2011) pp. 779–811.
- L. Dieci, L. Lopez *Fundamental matrix solutions of piecewise smooth differential systems*. Mathematics and Computers in Simulation, 81, (2011), pp. 932-953.
- L. Dieci, L. Lopez, *A survey of numerical methods for IVPs of ODEs with discontinuous right-hand side* Journal of Computational and Applied Mathematics. Vol. 236 (16), 2012, 3967-3991.
- M. Berardi, L. Lopez, *Numerical Methods for Discontinuous Singularly Perturbed Differential Systems*. Chaotic Modeling and Simulation, Vol. 1, 2012, pp 3-15,
- M. Berardi, L. Lopez, *On the continuous extension of Adams-Bashforth methods and the event location in discontinuous ODEs*. Applied Mathematics Letters, Vol. 25 (6), 2012, 995-999.
- L. Dieci, L. Lopez *Numerical solution of discontinuous differential systems: Approaching the discontinuity surface from one side*. Applied Numerical Mathematics, Vol 67, (5) 2013 pp 98–110.
- L. Dieci, C. Elia, L. Lopez, *A Filippov sliding vector field on an attracting co-*

*dimension 2 discontinuity surface, and a limited loss-of-attractivity analysis.* Journal of Differential Equations, Vol. 254 (4) (2013), pp 1800-1832.

N. Del Buono, C. Elia, L. Lopez, *On the equivalence between the sigmoidal approach and Utkin's approach for piecewise-linear models of gene regulatory networks.* SIAM Journal on Applied Dynamical Systems, Vol. 13 (3), (2014) pp 1270–1292.

L. Dieci, C. Elia, L. Lopez, *Sharp sufficient attractivity conditions for sliding on a codimension 2 discontinuity surface.* Mathematics and Computers in Simulation, Vol. 110, (2015), pp. 3–14.

L. Dieci, L. Lopez, *One-sided direct event location techniques in the numerical solution of discontinuous differential systems.* BIT Numerical Mathematics, Vol. 55 (4), (2015), pp 987–1003.

N. Del Buono, L. Lopez *Direct event location techniques based on Adams multistep methods for discontinuous ODEs .* Applied Mathematics Letters, 49 (4), (2015), pp 152—158.

L. Dieci, C. Elia, L. Lopez, *Uniqueness of Filippov Sliding Vector Field on the Intersection of Two Surfaces in  $R^3$  and Implications for Stability of Periodic Orbits.* Journal of Nonlinear Science, Vol. 25 (6), (2015) pp 1453–1471.

L. Lopez, G. Vacca *Spectral properties and conservation laws in mimetic finite difference methods for PDEs.* Journal of Computational and Applied Mathematics, Vol. 292, (2), (2016) pp 760—784.

M. D'Abbicco, N. Del Buono, P. Gena, M. Berardi, G. Calamita, L. Lopez, *A model for the hepatic glucose metabolism based on Hill and step functions.* Journal of Computational and Applied Mathematics, Vol. 292, (2), (2016), pp. 746—759.

L.B. Da Veiga, L. Lopez, G. Vacca, *Mimetic finite difference methods for Hamiltonian wave equations in 2D.* Computers & Mathematics with Applications, Vol. 74 (5), (2017) pp. 1123-1141.

M. Berardi, A. Andrisani, L. Lopez, M. Vurro, *A new data assimilation technique based on ensemble Kalman filter and Brownian bridges: an application to Richards' equation.* Computer Physics Communications, Vol. 208, (2018) pp. 43–53.

L. Lopez, S. Maset, *Time-transformations for the event location in discontinuous ODEs.* Mathematics of Computation, Vol. 87, (2018) pp. 2321–2341.

A. Colombo, N. Del Buono, L. Lopez, A. Pugliese, *Computational techniques to locate crossing/sliding regions and their sets of attraction in non-smooth dynamical systems.* Discrete & Continuous Dynamical Systems-B, Vol. 23 (7), (2018) pp.2911-2934.

M. Berardi, F. Difonzo, M. Vurro, L. Lopez, *The 1D Richards' equation in two layered soils: a Filippov approach to treat discontinuities.* Advances in Water Resources, Vol. 115, (8) (2018) pp. 264-272.

G.M. Coclite, A. Fanizzi, L. Lopez, F. Maddalena, S.F. Pellegrino, *Numerical Methods for the Nonlocal Wave Equation of the Peridynamics.* Applied Numerical Mathematics, Vol. 155, September 2020, pp. 119-139.

M. Berardi, F. Difonzo, L. Lopez, *A mixed MoL-TMoL for the numerical solution of the 2D Richards' equation in layered soils*. Computers & Mathematics with Applications, Vol. 79, (7), 1 April 2020, pp. 1990-2001.

L. Lopez, S.F. Pellegrino *A spectral method with volume penalization for a nonlinear peridynamic model*. International Journal for Numerical Methods in Engineering, (2020) 122 (3), 707-725.

L Dieci, C Elia, L Lopez *On Filippov solutions of discontinuous DAEs of index 1*. Communications in Nonlinear Science and Numerical Simulation, Vol. 95, April 2021, 105656.

L. Lopez, S.F. Pellegrino, *A space-time discretization of a nonlinear peridynamic model on a 2D lamina*. Computers & Mathematics with Applications. Vol. 116 (15) (2022), pp. 161–175 <https://doi.org/10.1016/j.camwa.2021.07.004>

L Lopez, S.F. Pellegrino, *Computation of Eigenvalues for Nonlocal Models by Spectral Methods*. Journal of Peridynamics and Nonlocal Modeling. December (2021) DOI: 10.1007/s42102-021-00069-8.

L. Lopez, S. Maset *Numerical event location techniques in discontinuous differential algebraic equations*. Applied Numerical Mathematics. Vol. 178 (2022), pp. 98-12.

L. Lopez, S.F. Pellegrino *A non-periodic Chebyshev spectral method avoiding penalization techniques for a class of nonlinear peridynamic models*. International Journal for Numerical Methods in Engineering. Vol. 123 (20), (2022) pp. 4859-4876.

## EDITORIAL ACTIVITIES

Editor of *Mediterranean Journal of Mathematics*, Birkhauser. Year: 1999-2017.

Guest Editor (joint with N. Del Buono). Special Issue: *Important aspects on structural dynamical systems and their numerical computation*. Mathematics and Computers in Simulation, Vol. 81/5 (2011), pp. 929-1098, Elsevier Science Publ. Comp.

Guest Editor (joint with N. Del Buono, and T. Politi). Special Issue: *Structural Dynamical Systems, Computational Aspects*. Mathematics and Computer in Simulation, Vol. 79/4 (2008), pp. 1233-1421, Elsevier Science Publ. Comp.

Guest Editor (joint with N. Del Buono, and T. Politi). Special Issue: *Numerical Methods for Structured Systems*, Future Generation Computer Systems, Vol. 22, (2006), pp. 393-446, Elsevier Science Publ. Comp.

Managing Guest Editor (guest editors: B. Brogliato, and P. Piiroinen and T. Kuepper). Special Issue: *Discontinuous Dynamical Systems: Theory and Numerical methods*. Mathematics and Computer in Simulation, Vol. 81 (2011), Elsevier Science Publ. Comp.

Managing Guest Editor (guest editors: L. Dieci, and N. Guglielmi). Special Issue: *Advanced Numerical methods for Dynamical Systems*. Journal of Computational and Applied Mathematics, Vol. 292 (2016), Elsevier Science Publ. Comp.

Managing Guest Editor (guest editors: L. Dieci, and N. Guglielmi). Special Issue: *SDS2016 Methods in PDEs*. Computers & Mathematics with Applications, Vol. 74, 1 September (2017), Elsevier Science Publ. Comp.

Managing Guest Editor (guest editors: M. Falcone, A. Russo, V. Simoncini). Special Issue: *Computational Methods in PDEs*. Computers & Mathematics with Applications, Vol. 79, Issue 7, (2020), Elsevier Science Publ. Comp.

Managing Guest Editor (guest editors: M. Falcone, A. Russo, V. Simoncini). Special Issue: *New trends in Computational Methods for PDEs*. Computers & Mathematics with Applications, Vol. 116, 15 June 2022, Elsevier Science Publ. Comp.

REFEREE  
ACTIVITIES

Referee for: *SIAM Journal Numerical Analysis*; *Mathematics of Computation*; *BIT Numerical Mathematics*; *Applied Mathematics and Computation*; *Numerische Mathematik*; *Applied Numerical Mathematics*; *Journal of Computational and Applied Mathematics*; *Calcolo*; *Journal of Computational Methods in Science and Engineering*; *IEEE Transactions on Automatic Control*; *Mediterranean Journal of Mathematics*; *European Journal of Control*; Computers & Mathematics with Application.

REFEREE OF  
RESEARCH  
PROJECTS

- Referee for the National Research Project of the Italian Ministry of Research, PRIN 2004;
- Referee for the National Research Project of the Italian Ministry of Research, "Futuro Giovani e Ricerca" 2010;
- Referee for the Italian Agency for the Research Evaluation (CIRV), years 2003-2005.
- Referee for the Swiss National Science Foundation (SNSF), year 2014.

CONFERENCE:  
PARTICIPATIONS  
AND TALKS (SINCE  
2001)

- Capitolo, Bari, July 1-4, 2001: *Workshop Structural Dynamical Systems in Linear Algebra and Control: Computational Aspects*.
- Ferrara, February 12-13, 2002: *Annual GNCS Congress*.
- Bari, December 18-20, 2002: *International Workshop on Computational Codes*.
- Milan, Italy, February 10-11, 2003: *Annual GNCS Congress*.
- Pisa, Italy, 6-7 March 2003: *Giornate di Algebra Lineare Numerica 2003*.
- Saint Petersburg, Russian, June 2-4, 2003: *International Conference on Computational Science, ICCS2003*.
- Capitolo, Bari, June 22-25, 2003: *Workshop Structural Dynamical Systems in Linear Algebra and Control: Computational Aspects*.
- Trondheim, Norway, June 30-July 4, 2003. *International Conference on Scientific Computation and Differential Equations, SciCADE 2003*.
- Udine, Italy, January 22-23, 2004: *Giornate di Algebra Lineare Numerica e Applicazioni*.
- Shonan Village, Japan, March 7-12, 2004: *US-Japan Workshop on Dynamics and Computations*.
- Bari, May 27-28, 2004: *Workshop on Dynamical Systems on Matrix Manifolds: Numerical Methods and Applications*.
- Krakow (Poland), June 7-9, 2004: *International Conference on Computational Science, ICCS2004*.
- San Servolo Island, Venezia (Italy), September 20-24, 2004: *International Conference of SIMAI 2004*.
- Rende (Cosenza), 19-21 Maggio 2005: *Conference on Numerical Analysis: The State of Art*.
- Nagoya, Japan, May 23-27, 2005: *International Conference on Scientific Computation and Differential Equations, SciCADE 2005*.
- Capitolo, Bari, June 26-29, 2005: *Workshop Structural Dynamical Systems in Linear Algebra and Control: Computational Aspects*.
- Athens, Greece, September 22-24, 2005: *Hellenic-European Conference on Computer Mathematics and Applications, HERCMA 2005*.

- Zurich, 16-20 July, 2007: *6th International Congress on Industrial and Applied Mathematics*, ICIAM Conference.
- Bari, Italy, September 24-29, 2007: *XVIII Congresso Unione Matematica Italiana*.
- Bologna, Dipartimento di Matematica, March 6-7, 2008: *Due giorni di Algebra Lineare Numerica*. Dipartimento di Matematica, University of Bologna.
- Rome, Italy, September 15-19, 2008. *SIMAI 9th Conference*.
- Chania, Crete, Greece, September 15-18, 2010: *Conference in Numerical Analysis (NumAn 2010): Recent Approaches to Numerical Analysis: Theory, Methods and Applications*.
- Agios Nikolaos, Crete, May 31-June 3, 2011: *4th Chaotic Modeling and Simulation International Conference*.
- Urbino, Italy, Sept 21-23, 2011: *Topics in Nonlinear Dynamics of Piecewise-smooth dynamical systems*.
- Valladolid, Sept 16-20, 2013. Minisymposia *Discontinuous dynamical systems: theory and numerical methods*. SciCADE 2013: International Conference on Scientific Computation and Differential Equations.
- Urbino, Italy, Sept 23-25, 2013: *Topics in Nonlinear Dynamics of Piecewise-smooth dynamical systems*.
- Chania, Crete, Greece, September 2-5, 2014: *Conference in Numerical Analysis (NumAn 2014): Recent Approaches to Numerical Analysis: Theory, Methods and Applications*.
- Lisbon, July 1-5, 2019, *International Conference on Differential & Difference Equations and Applications*.
- Chania, Crete, Greece, June 16-23, 2019: *The 12th CHAOS 2019 International Conference*.

CONGRESSES AND  
MINISYMPOSIA  
ORGANIZATION:  
2002-2022

- Saint Petersburg, June 2-4, 2003: *Minisymposia on Numerical methods for structured systems* ICCS2003 International Conference.
- Capitolo, Bari, June 22-25, 2003: *Workshop Structural Dynamical Systems in Linear Algebra and Control: Computational Aspects*.
- Bari, May 27-28, 2004: *Workshop on Dynamical Systems on Matrix Manifolds: Numerical Methods and Applications*.
- Krakow (Poland), June 7-9, 2004: Technical Session on *New Numerical Techniques for ODEs and Applications to Linear Algebra, Control and Engineering*, ICCS2004 International Conference.
- Edinburgh (Scotland) June 28-July 1st, 2004: *Workshop on Lie Group Methods and Control Theory*.
- San Servolo Island, Venezia (Italy), September 20-24, 2004: Invited minisymposia on *Dynamical Systems on Matrix Manifolds: Numerical Methods and Applications*, SIMAI Conference 2004.
- Capitolo, Bari, June 26-29, 2005: *SDS Workshop Structural Dynamical Systems: Computational Aspects*.
- Capitolo, Bari, June 13-16, 2006: *SDS Workshop Structural Dynamical Systems: Computational Aspects*.
- Capitolo, Bari, June 17-20, 2008: *5th SDS Workshop Structural Dynamical Systems: Computational Aspects*.
- Geneva, June 17-20, 2009. Minisymposia (together with Prof. A. Bellen) *Discontinuous Differential Equations*. Conference in honour of E. Hairer's 60th birthday.
- Capitolo, Bari, June 8-11, 2010: *6th SDS Workshop Structural Dynamical Systems: Computational Aspects*.
- Capitolo, Bari, June 12-15, 2012: *7th SDS Workshop Structural Dynamical Systems: Computational Aspects*.
- Valladolid, Sept 16-20, 2013. Minisymposia (together with Cinzia Elia) *Dis-*

*continuous dynamical systems: theory and numerical methods* . SciCADE 2013: International Conference on Scientific Computation and Differential Equations

- Capitolo, Bari, June 8-11, 2014: *8th SDS Workshop Structural Dynamical Systems: Computational Aspects*.
- Potsdam, Sept 14-18, 20015. Minisymposia (together with Cinzia Elia) *Discontinuous dynamical systems: theory and numerical methods*. SciCADE 2015: International Conference on Scientific Computation and Differential Equations.
- Capitolo, Bari, June 14-17, 2016: *9th SDS Workshop Structural Dynamical Systems: Computational Aspects*.
- Bari, 8 June, 2017, Dept of Math Univ. of Bari *One Day Workshop on Applied Math* organized together with (G. Coclite, G. Puglisi, M. Ligabó, etc).
- Capitolo, Bari, June 12-15, 2018: *10th SDS Workshop Structural Dynamical Systems: Computational Aspects*.
- Bari, 31 May, 2018, Poliba of Bari *II One Day Workshop on Applied Math* organized together with (G. Coclite, G. Puglisi, M. Ligabó, etc).
- Bari, 6 June, 2019, Poliba of Bari *III One Day Workshop on Applied Math* organized together with (G. Coclite, G. Puglisi, M. Ligabó, etc).
- Pavia, Sept 2019, UMI Conference, Minisymposia (together with Nicola Guglielmi): *Sistemi dinamici ed equazioni differenziali ordinarie: metodi numerici*
- Bari, 31 May, 2022, Poliba of Bari *IV One Day Workshop on Applied Math* organized together with (G. Coclite, G. Puglisi, M. Ligabó, etc).
- Rosa Marina, Brindisi, June 7-10, 2022: *11th SDS Meeting: Structural Dynamical Systems: Computational Aspects*. organized together with Del Buono N., Elia C., Pugliese A., Garrappa R., Vacca G., Diele F., etc.

RESEARCH GRANTS 1992-2015: Local Funds for Research Activities, University of Bari.

1995: National Research Project of C.N.R. : *Numerical methods for parallel computing*;

1996: National Research Project of C.N.R. : *Numerical methods for isospectral problems*;

1997: National Research Project of C.N.R. : *Numerical methods for isospectral problems in Mathematics and Engineering*.

1998: National Research Project of C.N.R. : *Numerical methods for evolution problems*.

2000: National Research Project of GNCS (Institute of High Mathematics): *Numerical methods for ODEs*.

2001: National Research Project of GNCS (Institute of High Mathematics): *Numerical methods for ODEs and integral equations*.

2002: National Research Project of GNCS (Institute of High Mathematics): *Geometric numerical integration*.

2003-2004: Italian Ministry of Research, PRIN Project 2003: *Dynamical systems on matrix manifolds: numerical methods and applications*.

2005: National Research Project of GNCS (Institute of High Mathematics): *Differential problems: analysis and methods*.

2005-07: INDAM Research Project: *Numerical methods on differential manifolds for neural networks*.

2007-2010: Italian Ministry of Research, PRIN Project 2007: leader of the local unit *Numerical methods for structural and variable structural differential systems*. Principal Investigator: Alfredo Bellen.

2011-2012: GNCS Research Grant. *Numerical methods for discontinuous ODEs*.

2011-2012: Cassa di Risparmio di Puglia Bank. *Discontinuous Mathematical Models in Gene regulatory Network*.

2017: National Research Project PRIN: leader of the local unit entitled: "Dynamical Discontinuous Systems: Theory and Numerical Methods". Principal Investigator:



Nicola Guglielmi.

MAIN TEACHING EXPERIENCE	University of Bari, Italy	Years
	<b>Instructor</b> <i>Numerical Methods and Mathematical Models</i> , Dept. of Mathematics.	1981-2022
	<b>Instructor</b> <i>Numerical Analysis I</i> , Dept. of Mathematics.	2012-2022
	<b>Instructor</b> <i>Numerical Analysis</i> , Dept. of Electronic Engineering.	1981-1992
	<b>Instructor</b> <i>Numerical Analysis</i> , Dept. of Computer Science.	1987-94
	<b>Instructor</b> <i>Operation Research</i> , Business School.	1988-91
	<b>Instructor</b> <i>Numerical Methods and Mathematical Models</i> , Dept. of Computer Science.	1992-95
	<b>Instructor</b> <i>Numerical Analysis</i> , Dept. of Computer Science. <i>Numerical Methods for ODEs</i> , PhD School, Univ. Bari.	1995-2012
	<b>Instructor</b> <i>Simulation Techniques</i> , Dept. of Computer Science.	1998-2002
	<b>Instructor</b> <i>Models and Numerical Methods for Ecology</i> , Dept. of Mathematics	2013-2022
	<b>Georgia Tech Institute, Atlanta, USA</b>	Year
	<b>Instructor</b> <i>Numerical Analysis II</i> , School of Math.	2006-2007