MARCO VERANI [1]

Personal Information:
Born in Cremona 28.06.1975
Italian Citizenship

Work Address:
MOX - Department of Mathematics, Politecnico di Milano
via Bonardi, 9 - 20133 Milano, Italy
phone: +39-02-23994610
fax: +39-02-23994506
e-mail: marco.verani@polimi.it
web: http://www1.mate.polimi.it/~verani

CURRENT POSITION

13.04.2015 - present: Associate Professor of Numerical Analysis at MOX, Department of Mathematics, Politecnico di Milano.

01.01.2007 - present: Research Associate at the IMATI-CNR Istituto di Matematica Applicata e Tecnologie Informatiche "Enrico Magenes" of Pavia.

PAST POSITION

16.12.2002 - 12.04.2015: Assistant Professor of Numerical Analysis at MOX, Department of Mathematics, Politecnico di Milano.

EDUCATION

[1] Autorizzo il Politecnico di Milano a pubblicare il presente curriculum sul sito WEB di Ateneo, ai fini istituzionali e in ottemperanza al D. Lgs n. 33 del 14 marzo 2013 "Decreto trasparenza" come modificato dal D. Lgs. 97 del 2016

2004-2005:Visiting researcher at the Department of Mathematics (group of Prof. R.H. Nochetto), University of Maryland, College Park, USA (from 01.06.2004 to 01.03.2005)

2003: Ph.D in Computational Mathematics and Operative Research, Università di Milano, 31.1.2003

Title: *Nonlinear wavelet methods for the solution of PDE's*

Advisor: S. Bertoluzza (IMATI-CNR, Pavia)

2002: Diploma of SAFI Advanced School, Institute for Advanced Study-IUSS, Pavia.

1998: Laurea Degree in Mathematics cum laude, Università di Pavia, 19.11.1998.

Title: *Aprossimazione Wavelet non lineare applicata a equazioni differenziali*

Advisors: G.A. Pozzi and S. Bertoluzza

SCIENTIFIC INTERESTS

Numerical methods for PDEs on polyedral meshes;

Adaptivity for PDEs: h and hp Finite Elements, High order and Wavelet methods;

Numerical methods for shape optimization and optimal control problems;

Modelling of industrial processes (extrusion, ink-jet printing, 3D printing, metal foams)

Social Mathematics: promote mathematics as a social tool to: (1) reduce gambling abuse, (2) integrate young migrants and refugees into italian society.

PUBLICATIONS (Numerical Analysis)

Submitted

1. P.F Antonietti, C. Facciolà, M. Verani, Unified analysis of Discontinuous Galerkin approximations of flows in fractured porous media on polygonal and polyhedral grids, MOX-Preprint 09/2019.

Refereed Journal Papers

64. P.F Antonietti, G. Manzini, M. Verani, The conforming virtual element method for polyharmonic problems, accepted on Computers and Mathematics with Applications.
63. L. Ratti, M. Verani, A posteriori error estimates for the monodomain model in cardiac electrophysiology, Calcolo 56 (2019), no. 3.
62. P.F Antonietti, M. Verani, C. Vergara and S. Zonca, Numerical solution of fluid-structure interaction problems by means of a high order Discontinuous Galerkin method on polygonal grids, Finite Elem. Anal. Des. 159 (2019), 1–14.
61. P.F. Antonietti, C. Canuto and M. Verani, An adaptive hp-DG-FE Method for Elliptic Problems. Convergence and Optimality in the 1D Case, Communications on Applied Mathematics and Computation, 1 (2019), no. 3: 309–331
60. C. Canuto, R. H. Nochetto, R. Stevenson and M. Verani, A saturation property for the spectral-Galerkin approximation of a Dirichlet problem in a square, ESAIM: Mathematical Modelling and Numerical Analysis, 53 (2019), no. 3: 987–1003.
59. S. Berrone, A. Bonito, R. Stevenson and M. Verani, An optimal adaptive Fictitious Domain Method, Math. Comp. 88 (2019): 2101–2134.
58. P. F. Antonietti, C. Facciola', A. Russo and M. Verani, Discontinuous Galerkin approximation of flows in fractured porous media on polytopic grids, SIAM J. Sci. Comput., 41(2019), no.1 , A109–A138.
57. I. Fumagalli, N. Parolini and M. Verani, Optimal control in ink-jet printing via instantaneous control, Computers & Fluids 172(2018), no. 30, 264–273.
56. F. Regazzoni, N. Parolini and M. Verani, Topology optimization of multiple anisotropic materials, with application to self-assembling diblock copolymers, Computer Methods in Applied Mechanics and Engineering 338(2018), 562–596.
55. E. Beretta, L. Ratti and M. Verani, Detection of conductivity inclusions in a semilinear elliptic problem arising from cardiac electrophysiology, Communications in Mathematical Sciences, 16(2018), no. 7, 1975–2002.
54. M. Tamellini, N. Parolini and M. Verani, An optimal control problem of two-phase compressible-incompressible flows, Computer & Fluids, Computers and Fluids 172(2018), 538–548.
53. P. F. Antonietti, L. Mascotto and M. Verani, A multigrid algorithm for the p-version of the Virtual Element Method, ESAIM: Mathematical Modelling and Numerical Analysis 52(2018), no. 1, 337–364.
52. C. Andra', D. Brunetto, N. Parolini and M. Verani, Student interactions during class activities: a mathematical model, Commun. Appl. Ind. Math. 9(2018) no. 2, 91–105.
51. I. Fumagalli, N. Parolini and M. Verani, On a free-surface problem with moving contact line: from variational principles to stable numerical approximations, Journal of Computational Physics, 355(2018), 253–284.
50. M. Bruggi, N. Parolini, F. Regazzoni and M. Verani, Topology Optimization with a time-integral cost functional, Finite Elements in Analysis and Design, 140(2018), no. 15, 11–22.

49. P. F. Antonietti, G. Manzini and M. Verani, The Fully Nonconforming Virtual Element Method for Biharmonic problems, M3AS, 28 (2018), no.2, 387–407.

48. E. Repossi, R. Rosso and M. Verani, A phase-field model for liquid-gas mixtures: mathematical modelling and Discontinuous Galerkin discretization, Calcolo, 54(2017), no.4, 1339–1377.

47. A. Agosti, P. F. Antonietti, P. Ciarletta, M. Grasselli and M. Verani, A Cahn-Hilliard type equation with application to tumor growth dynamics, Mathematical Methods in the Applied Sciences, Volume 40 (2017), no.18, 7598–7626.

46. P. F. Antonietti, M. Bruggi, S. Scacchi and M. Verani, On the Virtual Element Method for Topology Optimization on polygonal meshes: a numerical study, Computers and Mathematics with Applications, 74 (2017), no. 5, 1091–1109.

45. P. F. Antonietti, P. Houston, X. Hu, M. Sarti and M. Verani, Multigrid algorithms for hp-version Interior Penalty Discontinuous Galerkin methods on polygonal and polyhedral meshes, Calcolo, 54(2017), no. 4, 1169–1198.

44. C. Canuto, R.H. Nochetto, R. Stevenson and M. Verani, On p-Robust Saturation for hp-AFEM, Computers and Mathematics with Applications 73 (2017), no. 9, 2004–2022.

43. P. F. Antonietti, B. Merlet, M. Pierre and M. Verani, Convergence to equilibrium for a second-order time semi-discretization of the Cahn-Hilliard equation, AIMS Mathematics, 1 (2016) no. 3, 178–194.

42. C. Canuto, R.H. Nochetto, R. Stevenson and M. Verani, Adaptive Spectral Galerkin Methods with Dynamic Marking, SIAM J. Numer. Anal. 54 (2016) no. 6, 3193–321.

41. P. F. Antonietti, M. Sarti, M. Verani and Zikatanov, L. T. A uniform additive Schwarz preconditioner for the hp-version of Discontinuous Galerkin approximations of elliptic problems, J Sci Comput, 70(2017) no. 2, 608–630.

40. C. Canuto, R.H. Nochetto, R. Stevenson and M. Verani, Convergence and Optimality of hp-AFEM, Numerische Mathematik, 135 (2017) no. 4, 1073–1119.

39. G. Berlusconi, F. Calderoni, N. Parolini, M. Verani and C. Piccardi, Link Prediction in Criminal Networks: A Tool for Criminal Intelligence Analysis. PLoS ONE 11 (2016), no. 4: e0154244. doi: 10.1371/journal.pone.0154244.

38. I. Fumagalli, A. Manzoni, N. Parolini and M. Verani, Reduced basis approximation and a posteriori error estimates for parametrized elliptic eigenvalue problems, ESAIM: Mathematical Modelling and Numerical Analysis, 50 (2016), no. 6, 1857–1885.

37. P.F. Antonietti, L. Formaggia, A. Scotti, M. Verani and N. Verzotti, Mimetic finite difference approximation of flows in fractured porous media, ESAIM: Mathematical Modelling and Numerical Analysis 50 (2016), no. 3, 809–832.

36. P. F. Antonietti, L. Beirao da Veiga, S. Scacchi and M. Verani, A C^1 virtual element method for the Cahn-Hilliard equation with polygonal meshes, SIAM J. Numer. Anal. 54 (2016) no.1, 34–56.

35. C. Giverso, M. Verani and P. Ciarletta, Emerging morphologies in round bacterial colonies: comparing volumetric versus chemotactic expansion, Biomechanics and Modeling in Mechanobiology 15 (2016) no. 3, 643–661.

34. P. F. Antonietti, M. Grasselli, S. Stangalino and M. Verani, Discontinuous Galerkin approximation of linear parabolic problems with dynamic boundary conditions, J. Sci. Comput. 66 (2016), no.3, 1260–1280.

33. P. F. Antonietti, M. Verani and L. Zikatanov, A Two-Level Method for Mimetic Finite Difference Discretizations of Elliptic Problems, Computers and Mathematics with Applications, 70 (2015), no.11, 2674–2687.

32. C. Andra', N. Parolini and M. Verani. Using gambling simulators to foster awareness about gambling risks, Digital Experience in Mathematics Education 1(2015), no. 1, 59–78

31. C. Giverso, M. Verani and P. Ciarletta, Mechanically driven branching of bacterial colonies, ASME. J Biomech Eng. 137 (2015), no.7, 071003–071003-10.

30. P. F. Antonietti, A. Dedner, P. Madhavan, S. Stangalino, B. Stinner and M. Verani, High order discontinuous Galerkin methods on surfaces, SIAM J. Numer. Anal. 53 (2015), no.2, 1145–1171.

29. C. Giverso, M. Verani and P. Ciarletta, Branching instability in expanding bacterial colonies, Journal of the Royal Society Interface, 12 (2015) no. 104, doi:10.1098/rsif.2014.1290.

28. P. F. Antonietti, M. Sarti and M. Verani, Multigrid algorithms for hp-discontinuous Galerkin discretizations of elliptic problems, SIAM J. Numer. Anal. 53 (2015), no.1, 598–618.

27. I. Fumagalli, N. Parolini and M. Verani, Shape optimization for Stokes flow: a reference domain approach, ESAIM: Mathematical Modelling and Numerical Analysis (M2AN), 49 (2015), no.4, 921–951.

26. C. Canuto, V. Simoncini and M. Verani, Contraction and optimality properties of an adaptive Legendre-Galerkin method: the multi-dimensional case, J. Sci. Comput. 63 (2015), no.3, 769–798.

25. C. Canuto, V. Simoncini and M. Verani, On the decay of the inverse of matrices that are sum of Kronecker products, Linear Algebra and Its Applications, 452 (2014), 21–39.

24. P. F. Antonietti, N. Bigoni and M. Verani, Mimetic finite difference approximation of quasilinear elliptic problems, Calcolo, 52 (2015), no.1, 45–67.

23. P. F. Antonietti, L. Beirao da Veiga, N. Bigoni and M. Verani, Mimetic finite differences for nonlinear and control problems, M3AS: Mathematical Models and Methods in Applied Sciences, 24 (2014), no. 8, 1457–1493.

22. P. F. Antonietti, L. Beirao da Veiga, D. Mora and M. Verani, A stream virtual element formulation of the Stokes problem on polygonal meshes, SIAM J. Numer. Anal. 52 (2014) no.1, 386–404.

21. C. Canuto, R.H. Nochetto and M. Verani, Contraction and optimality properties of adaptive Legendre-Galerkin methods: the 1-dimensional case, Computers and Mathematics with Applications, 67 (2014), no. 4, 752–770.

20. P.F. Antonietti, A. Borzí and M. Verani, Multigrid shape optimization governed by elliptic PDEs, SIAM J. Control Optim. 51 (2013), no. 2, 1417–1440.

19. C. Canuto, R.H. Nochetto and M. Verani, Adaptive Fourier-Galerkin Methods, Math. Comp. 83 (2014), 1645–1687.

18. P.F. Antonietti, L. Beirao da Veiga, C. Lovadina and M. Verani, Hierarchical a posteriori error estimators for the mimetic discretization of elliptic problems, SIAM J. Numer. Anal. 51 (2013), no. 1, 654–675.

17. P. F. Antonietti, N. Bigoni and M. Verani, A mimetic discretization for optimal control problems, J. Sci. Comput., 56 (2013), no. 1, 14-27.

16. P. F. Antonietti, L. Beirao da Veiga and M. Verani, A mimetic discretization for elliptic obstacle problems, Math. Comp. 82 (2013), 1379-1400.

15. P. Morin, R. H. Nochetto, M. S. Pauletti and M. Verani, Adaptive finite element method for shape optimization. ESAIM: Control, Optimisation and Calculus of Variations, 18 (2012), no. 4, 1122–1149.

14. M. Bruggi and M. Verani, An adaptive algorithm for topology optimization with goal-oriented error control, Comput. Struct., 89 (2011), no. 15-16, 1481–1493.

13. R. Ghelichi, S. Bagherifard, M. Guagliano and M. Verani, A numerical approach to assess the critical velocity in cold spray coating process, Surface and Coating Technology, 205 (2011), no. 23-24, 5294–5301.

12. P. F. Antonietti, N. A. Fadel and M. Verani, Modelling and numerical simulation of the polymeric extrusion process in textile products, Communications in Applied and Industrial Mathematics, 1 (2010), no. 2, 1–13.

11. P. F. Antonietti, P. Biscari, A. Tavakoli, M. Verani and M. Vianello, Theoretical study and numerical simulation of textiles, Appl. Math. Model. 35 (2011), no. 6, 2669–2681.

10. L. Beirao da Veiga and M. Verani, A Posteriori boundary control for FEM approximation of elliptic eigenvalue problems, Numerical Methods for Partial Differential Equations, 28 (2012), no. 2, 369–388.

9. S. Berrone and M. Verani, A New Marking Strategy for the Adaptive Finite Element Approximation of Optimal Control Constrained Problems, Optimization Methods and Software, 26 (2011), no. 4-5, 747–775.

8. R.H. Nochetto, A. Veeser and M. Verani, A Safeguarded Dual Weighted Residual Method, IMA J. Numer. Anal. 29 (2009), no. 1, 126–140.

7. R. Rosso and M. Verani, Stabilizing role of a curvature correction to line tension, SIAM J. Appl. Math. 69 (2008), no. 2, 524–551.

6. S. Micheletti, S. Perotto and M. Verani, Goal oriented analysis via an adaptive Uzawa algorithm, IMA J. Numer. Anal. 28 (2008), no. 3, 619–646.

5. G. Dogan, P. Morin, R.H. Nochetto and M. Verani, Discrete gradient flows for shape optimization and applications, Comput. Methods Appl. Mech. Engrg., 196 (2007), no. 37, 3898–3914.

4. R. Rosso, E.G. Virga and M. Verani, Second variation of the energy functional for adhering vesicles in two space dimensions, J.Phys.A 36 (2003), no. 50, 12475–12493.

3. M. Verani A Wavelet adaptive Newton method for the solution of nonlinear equations, Appl. Math. Lett. 16 (2003), no. 8, 1301–1306.

2. S. Bertoluzza, S. Mazet and M. Verani, A nonlinear Richardson algorithm for the solution of elliptic

PDE's, Math. Models Methods Appl. Sci. 13 (2003), no. 2, 143–158.

1. S. Bertoluzza and M. Verani, Convergence of a nonlinear wavelet algorithm for the solution of PDE's, Appl. Math. Lett. 16 (2003), no. 1, 113–118.

Book Chapters

3. S. Berrone, A. Bonito and M. Verani, An Adaptive Fictitious Domain Method for Elliptic Problems, Advances in Discretization Methods: Discontinuities, Virtual Elements, Fictitious Domain Methods, SEMA SIMAI Springer Series 12, Springer International Publishing, G. Ventura and E. Benvenuti (ed.), 2016, doi: 10.1007/978-3-319-41246-7_11.
2. M. Falcone and M. Verani, Recent Results in Shape Optimization and Optimal Control for PDEs, Optimization with PDE Constraints, Lecture Notes in Computational Science and Engineering 101, Springer International Publishing Switzerland, R. Hoppe (ed.), 2014, doi: 10.1007/978-3-319-08025-3_3.
1. C. Canuto and M. Verani, On the Numerical Analysis of Adaptive Spectral/hp Methods for Elliptic Problems, Analysis and Numerics of Partial Differential Equations. In memory of Enrico Magenes, Springer INdAM Series, Vol. 4 (ISBN 978-88-470-2591-2), F. Brezzi, P.C. Franzone, U. Gianazza and G. Gilardi (Eds.), 2013.

Refereed Conference Proceedings

11. P.F. Antonietti, S. Berrone, M. Verani and S. Weisser. The virtual element method on anisotropic polygonal discretizations. Lecture Notes in Computational Science and Engineering, 126(2019), 725–733. European Conference on Numerical Mathematics and Advanced Applications, ENUMATH 2017, Voss, Norway, 25-29 September 2017.
10. M. Bruggi, N. Parolini, F. Regazzoni and M. Verani. Finite element approximation of a time-dependent topology optimization problem. ECCOMAS Congress 2016 VII European Congress on Computational Methods in Applied Sciences and Engineering M. Papadrakakis, V. Papadopoulos, G. Stefanou, V. Plevris (eds.) Crete Island, Greece, 5-10 June 2016.
9. P. A. Antonietti, M. Bruggi, S. Scacchi and M. Verani. VEM and Topology optimization on polygonal meshes. ECCOMAS Congress 2016 VII European Congress on Computational Methods in Applied Sciences and Engineering M. Papadrakakis, V. Papadopoulos, G. Stefanou, V. Plevris (eds.) Crete Island, Greece, 5-10 June 2016.
8. C. Canuto, R. H. Nochetto, R. Stevenson, and M. Verani. High-order adaptive Galerkin methods. Spectral and High Order Methods for Partial Differential Equations ICOSAHOM 2014, Lecture Notes in Computational Science and Engineering 106, Springer International Publishing Switzerland, R. M. Kirby, M. Berzins, J. S. Hesthaven (eds.), 2015, pp. 51–72, doi:10.1007/978-3-319-19800-2, Hardcover ISBN 978-3-319-19799-9.
7. P.F. Antonietti, M. Sarti, M. Verani, Multigrid algorithms for high order discontinuous Galerkin methods. Domain decomposition methods in Science and Engineering XXII, Lecture Notes Comput. Sci.

Eng. 104, Springer International Publishing Switzerland, T. Dickopf, M. J. Gander, L. Halpern, R. Krause, L. F. Pavarino (eds.), 2015, doi: 10.1007/978-3-319-18827-0, Hardcover ISBN 978-3-319-18826-3

6. P. F. Antonietti, P. Panfili, A. Scotti, L. Turconi, M. Verani, A. Cominelli and L. Formaggia, Optimal techniques to simulate flow in fractured reservoirs, 14th European Conference on the Mathematics of Oil Recovery, ECMOR 2014.
5. P.F. Antonietti, N. Bigoni and M. Verani, Mimetic finite difference method for shape optimization problems, Numerical Mathematics and Advanced Applications - ENUMATH 2013, Proceedings of the 10th European Conference on Numerical Mathematics and Advanced Applications, Springer Verlag Italia, 2014.
4. P.F. Antonietti, L. Beirao da Veiga and M. Verani, An adaptive MFD method for the obstacle problem. Numerical Mathematics and Advanced Applications - ENUMATH 2011, Proceedings of the 9th European Conference on Numerical Mathematics and Advanced Applications, Springer Verlag Italia, 2012.
3. E. Gariboldi, M. Verani, C. Riva, Modelling of phase evolution during aluminizing processes, Advanced Materials Research, 278 (2011), 228-233.
2. P. Morin, R. H. Nochetto, M. S. Pauletti, and M. Verani. Adaptive SQP method for shape optimization, Numerical Mathematics and Advanced Applications - ENUMATH 2009, Proceedings of the 8th European Conference on Numerical Mathematics and Advanced Applications, Springer Berlin Heidelberg, 2010.
1. M. Verani, A wavelet based adaptive scheme for the solution of nonlinear equations, Numerical Mathematics and Advanced Applications - ENUMATH 2001, Proceedings of the 4th European Conference on Numerical Mathematics and Advanced Applications, Springer Verlag Italia, 2003.

Other Publications

1. A. Tavakoli, P. F. Antonietti and M. Verani, Automatic computation of the impermeability of woven fabrics through image processing, MOX-Preprint 34/2013, 2013.

PUBLICATIONS (Mathematics Education)

Refereed Journal Papers

2. C. Andra', D. Brunetto, N. Parolini and M. Verani, Four fundamental modes of participation in mathematics group activities, International Journal of Science and Mathematics Education, DOI: 10.1007/s10763-018-09940-5.
1. C. Andra', N. Parolini and M. Verani Using Gambling Simulators to Foster Awareness About Gambling Risks: A Focus on Emotions, Digital Experiences In Mathematics Education, 1 (2015), no. 1, 59–78.

Books

1. C. Andrà, N. Parolini and M. Verani, BetOnMath: Azzardo e matematica a scuola, Springer, 2016

Refereed Conference Proceedings

4. C. Andrà, D. Brunetto, N. Parolini and M. Verani. (2019). Experiences of empowerment in mathematics. In Andr, C., Brunetto, D., Martignone, F. Proceedings of 25th International Conference on Mathematical Views. MAVI25.
3. D. Brunetto, C. Andrà, N. Parolini and M. Verani. (2015). Teachers' perspective on group dynamics. In Proceedings of 9th Congress of the European Society for Research in Mathematics Education. CERME9. (pp. 1309-1310). Prague, Czech Republic.
2. D. Brunetto, C. Andrà, N. Parolini and M. Verani. (2015). 'I can-you can': Cooperation in group activities. Proceedings of 9th Congress of the European Society for Research in Mathematics Education. CERME9. (pp. 1109-1115). Prague, Czech Republic.
1. C. Andrà, N. Parolini and M. Verani. (2014). Probability and gambling abuse. In: P. Liljedahl and C. Nicol (Eds.), Proceedings of the 38th Conference of the Psychology of Mathematics Education, (Vol.6, p. 282) Vancouver, CA: PME, 15-20 luglio 2014;

Other Publications

1. C. Andrà, D. Brunetto, N. Parolini and M. Verani, Una scommessa sulla matematica a scuola, Nuova Secondaria, 10(2018): 34–37.

GRANTS (principal investigator)

13. 2019: Principal Investigator of Unity at PoliMI of National Project *Piano Lauree Scientifiche - PN Matematica* (National Coordinator: Prof. Daniele Boffi), funded by MIUR. Amount: 17000,00 Euro.
12. 2019-2020 (Feb. 1, 2019-Jan. 30, 2020): Principal investigator of National project GNCS-Italian group of scientific computing "Metodi degli Elementi Virtuali (VEM) per problemi di Elettromagnetismo, Elasticità ed Elastodinamica: proprietà teoriche ed aspetti computazionali", Amount: 3700,00 Euro.
11. 2018-2020: Principal investigator of 5 per mille Polisocial Award Project *TEEN: Teenagers Experience the Empowerment by Numbers*, Funded by Politecnico di Milano, Italy. Amount: 62.000,00 Euro.
10. 2017: Italian grant for basic research funded by MIUR *Finanziamento delle attivit base di ricerca*. Amount: 3.000,00 Euro.
9. 2013-2015 (Oct. 15, 2013 - Oct. 14, 2015): Principal investigator of 5 per mille Polisocial Award Project *BetOnMath: Mathematics for problem gambling prevention*, Funded by Politecnico di Milano, Italy. Amount: 58.476,00 Euro.
8. 2014-2016 (Apr. 1, 2014 - Mar. 31, 2016): Co-Principal Investigator of FARB project "Diffuse interface tumor-growth models". Funded by Politecnico di Milano, Italy. Amount: 68.939,00 Euro.
7. 2013 (Jan. 1, 2013 - Dec. 31, 2013): Principal Investigator the Industrial Consulting Project with Laboratory MUSP (Machine Tools and Productive Systems) in Piacenza. Topic: Mathematical and numerical modelling

of metal foam production. Amount: 20.000,00 Euro.

6. 2012 (Dec. 5, 2011 - Jan. 4, 2013): Co-Principal investigator of the Industrial Consulting Project "*Mathematical modeling of the single screw extrusion process for wire coating*". Contractor: Aristoncavi S.p.a. Amount: 152.000,00 Euro.
5. 2010-2011 (Sept. 1, 2010March 30, 2011): Co-Principal Investigator of the Project "HOT-FDI II: Numerical modeling of the deformation properties of a textile subjected to an external load.". Funded by Fondazione Politecnico, Italy. Amount: 10.000,00 Euro.
4. 2010-2012 (May 5, 2010 - Feb. 3, 2012): Co-Principal investigator of the Regional Project "Dote Ricerca Applicata " supported by Regione Lombardia and Carvico S.p.a. (Research Topic: *Mathematical and Numerical Modelling of fluidodynamics of textile patches*). Amount: 46.000,00 Euro.
3. 2008-2010 (July 1, 2008- June 30, 2010.): Principal investigator of the Local Unity at the Department of Mathematics of the Project HOT-FDI "*Hollow and Transparent Fibers Design for Industries*" funded by MIUR (Coordinator: Fondazione Politecnico. Industrial partners: Carvico S.p.A. and RadiciFil). Amount: 80.000,00 Euro.
2. 2007-11 (July 18, 2007 - Mar. 18, 2011): Principal investigator of the Local Unity at the Department of Mathematics, Politecnico di Milano in National Project FIRB-Idee Progettuali *Innovative Materials and Technologies for italian textile industries-Materiali e tecnologie innovativi per il tessile italiano (MTIT)* (National Coordinator: Prof. A. Cigada). Amount: 253.476,00 Euro.
1. 2007-09 (Sept. 24, 2007 - Mar. 30, 2009): Principal investigator of the Local Unity at the Department of Mathematics, Politecnico di Milano in National Project COFIN 2006 *Adaptive numerical approximation of mutiscale and multiphysics problems- Approssimazione numerica di problemi multiscala e multifisica con tecniche adattive* (National Coordinator: Prof. F. Brezzi). Amount: 43.572,00 Euro.

GRANTS (investigator)

2019-2023 (42 months): European Project BURNER 4.0: Research Fund for Coal and Steel - Call: RFCS-2018. (Project Coordinator: Tenova S.p.A. Local Coordinator: Prof. N. Parolini)

2019-2021 (March, 2019 - March 2021): National project PRIN n. 201744KLJL: *"Virtual Element Methods: Analysis and Applications"* (Local Coordinator: Prof. P.F. Antonietti. National Coordinator: Prof. L. Beirao da Veiga).

2018-2019 (Feb. 1, 2018-Jan. 30, 2019): National project GNCS-Italian group of scientific computing "Metodi numerici avanzati per lo studio di problemi differenziali multifisica/multiscala alle derivate parziali" (Coordinator: Dr. I. Mazzieri).

2017-2018 (Feb. 1, 2017-Jan. 30, 2018): National project GNCS-Italian group of scientific computing "Advanced numerical techniques based on polygonal/polyedral discretizations for applicationd with complex geometries " (Coordinator: Prof. S. Berrone).

2017-2018 Industrial project "Modellizzazione e simulazione del processo di miscelazione distributiva e dispersiva in sistemi di miscelazione in continuo". Funded by Pirelli S.p.A, Italy. (Principal Investigator: Prof. Nicola Parolini).

2016-2017 (Mar. 1, 2016-Feb. 28, 2017) Industrial project "Modellizzazione e simulazione del processo di miscelazione distributiva e dispersiva in sistemi di miscelazione in continuo". Funded by Pirelli S.p.A, Italy. (Principal Investigator: Prof. Nicola Parolini).

2016-2017 (Feb. 1, 2016-Jan. 30, 2017): National project GNCS-Italian group of scientific computing "Algorithms and methods for fluid-structure interaction with applications to micro-circulation" (Coordinator: Prof. C. Vergara).

2014-2016 (Mar. 8, 2014 - 8 Mar. 2017): National project PRIN 2012: *"Innovative methodologies for PDE-based numerical modelling"* (Local Coordinator: Prof. A. Veeser. National Coordinator: Prof. C. Canuto).

2015-2016 (Apr. 1, 2015 - Mar. 31, 2016): MATHINSIDE (codice: PANN14T3_00521): National project of MIUR on Dissemination of Science among Citizens "Bando per la diffusione della Cultura Scientifca 2014" (Participants: Politecnico di Milano and Fondazione Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci- Coordinator: Prof. N. Parolini).

2015 (Feb. 1, 2015- Jan. 30, 2016): National project GNCS-Italian group of scientific computing "Non-standard numerical methods for geophysics" (Coordinator: Prof. P. F. Antonietti).

2013 (Feb. 1, 2013-Jan. 30, 2014): National project GNCS-Italian group of scientific computing "Innovative adaptive strategies for differential problems" (Coordinator: Prof. C. Canuto).

2012-2015 (Nov. 2012 - Oct. 2015): CEN (Centro Europeo Nanomedicina) project "Mathematical Modelling of Nanoscale Therapeutic Systems" (Principal Investigator: Pasquale Ciarletta).

2011-13 (Jan. 1, 2011 - Dec. 31, 2013): Argentina-Italy bilateral project "Innovative numerical methods for industrial problems with complex and mobile geometries" (Italian Coordinator: Prof. P. Pietra, Argentinian Coordinator: Prof. R. Duran).

2008-10 (Mar. 22, 2010 - Sep. 22, 2012): National project PRIN 2008: *"Analysis and development of advanced numerical methods for PDEs"* (Local Coordinator: Prof. R. Sacco. National Coordinator: Prof. F. Brezzi).

2010 (Feb. 1, 2010 - Jan. 30, 2011): National project GNCS-Italian group of scientific computing "Domain decomposition and adaptivity techniques for optimal control problems" (Coordinator: Prof. A. Veeser)

2009-2011 (Dec. 23, 2009 - Dec. 17, 2011): Italy-Spain bilateral project "Advanced numerical methods for computational fluidynamics and related problems in shape optimization" (Italian Coordinator: Prof. D. Marini, Spanish Coordinator: Dr. B. Ayuso de Dios)

2004-2006 (Nov. 30, 2004 - Dec. 22, 2006): National project PRIN 2004: *"Model and numerical adaptivity for partial differential equations"* (Local Coordinator: Prof. R. Sacco. National Coordinator: Prof. F. Brezzi).

HONORS AND AWARDS

2017: National *Prize Guido Castelnuovo* by UMI (Unione Matematica Italiana) for Popularisation and Dissemination of Mathematics.

2017: *5 per mille Polisocial Award* - Politecnico di Milano

2017: National scientific qualification to function as full professor of numerical analysis in Italian Universities.

2014: National scientific qualification to function as associate professor of numerical analysis in Italian Universities.

2013: *5 per mille Polisocial Award* - Politecnico di Milano

2004-2005: research fellowship funded by the European Grant *IHP BREAKING COMPLEXITY* (Coordinator: S. Bertoluzza).

2002: Italian national habilitation for teaching mathematics in italian high schools (class: A047).

1999-2002: Ph.D fellowship from Università degli Studi di Milano.

1999 and 2000: Prize *SAFI* of Advanced School, Institute for Advanced Study-IUSS of Pavia (Scuola Avanzata di Formazione Integrata dell'Istituto Universitario di Studi Superiori di Pavia).

1999: Research fellowship funded by Italian *INDAM-Istituto Nazionale di Alta Matematica "F. Severi"*.

1998: Prize *Prof. Vittorio Emanuele Galafassi* for the best thesis - Laurea degree in Matematics at the Università di Pavia, Academic Year 1997-1998.

1994-1998: Alumnus of the *Almo Collegio Borromeo*, Pavia.

VISITS AND RESEARCH EXPERIENCES[2]

2019: New York Abu Dhabi University (invited by E. Beretta and A. Gandolfi), University of Leicester (invited by E. Georgoulis), University of Nottingham (invited by P. Houston and A. Cangiani), University of Sussex (invited by O. Lakkis)

2017: University of Konstanz (invited by S. Volkwein and G. Ciaramella), New York Abu Dhabi University (invited by E. Beretta), University of Geneve (invited by M. Gander and G. Ciaramella)

2016: University of Amsterdam (invited by R. P. Stevenson).

2014: University of Maryland, College Park, USA (invited by R.H. Nochetto); Texas A&M University, College Station, USA (invited by A. Bonito).

2013: University of Trier (invited by V. Schulz), EPFL-Lausanne (invited by F. Nobile).

2012: University of Maryland, College Park, USA (invited by R.H. Nochetto); University of Wuerzburg,

[2]At least one week

Germany (invited by A. Borzí).

2011: Univérsidad Politecnica de Madrid, Spain (invited by C. Castro); Universidad Nacional del Litoral, Santa Fe, Argentina (invited by P. Morin).

2009: University of Maryland, College Park, USA (invited by R.H. Nochetto); Texas A&M University, College Station, USA (invited by A. Bonito)

2008: University of Maryland, College Park, USA (invited by R.H. Nochetto).

2007: Universidad Autonoma de Madrid, Spain (invited by B. Ayuso de Dios and E. Zuazua); Universidad Nacional del Litoral, Santa Fe, Argentina (invited by P. Morin).

2006: Universidad Nacional del Litoral, Santa Fe, Argentina (invited by P. Morin)

2005: University of Maryland, College Park, USA (invited by R.H. Nochetto); Universidad Nacional del Litoral, Santa Fe, Argentina (invited by P. Morin).

2004: University of Maryland, College Park, USA (invited by R.H. Nochetto); Universidad Nacional del Litoral, Santa Fe, Argentina (invited by P. Morin);

2002: Ecole Superieure de Mecanique, Marseille, France (invited by J. Liandrat);

2001: Laboratoire d'Analyse Numerique, Paris, France (invited by A. Cohen); Ecole Superieure de Mecanique, Marseille, France (invited by J. Liandrat).

CONFERENCE TALKS

Plenary Lectures

1. Invited talk at ICOSAHOM 2020, Wien, 6-10 July 2020.

Invited Lectures

1. *The conforming virtual element method for polyharmonic problems*, Minisymposium: Theoretical and computational advances in polygonal and polyhedral methods (Organizers: S. Lemaire, P. F. Antonietti, A. Cangiani, F. Dassi, D. Di Pietro), MAFELAP 2019, Brunel University, United Kingdom, June 18-21, 2019.
2. *An adaptive hp-DG-FE method for elliptic problems. Convergence and optimality in the 1D case*, Minisymposium: Recent advancements in p and hp Galerkin methods (Organizers: L. Mascotto, A. Chernov and Z. Dong), MAFELAP 2019, Brunel University, United Kingdom, June 18-21, 2019.
3. *Detection of conductivity inclusions in a semilinear elliptic problem arising from cardiac electrophysiology*, Workshop "Reconstruction Methods for Inverse Problems" - Banff International Research Station for Mathematical Innovation and Discovery (BIRS), 23-28 June 2019, Canada.
4. *The conforming virtual element method for polyharmonic problems*, Workshop POEMS 2019-Polytopal Element Methods in Mathematics and Engineering, Marseille, France, 29 April 29 - 3 May, 2019.

5. *Multigrid algorithms for p-version Virtual Element methods*, GIMC-GMA, 13-14 September 2018, Ferrara, Italy.
6. *The Virtual Element Method for linear and nonlinear fourth order problems*, Workshop within ERC project CHANGE (PI: A. Buffa), Leysin, Switzerland, 30 January-2 February 2018.
7. hp*-AFEM and angles between polynomial subspaces*, Minisymposium: Advances in numerical linear algebra methods and applications to PDEs (Organizers: Valeria Simoncini, Mattia Tani), ENUMATH 2017, Voss, Norway, 25-29 September 2017.
8. *Adaptive Spectral Galerkin Methods with Dynamic Marking*, Conference for 60th birthday of Y. Maday, Roscoff, France, 2-5 May 2017.
9. *A nonconforming Virtual Element Method for a biharmonic problem on polygonal meshes*, Minisymposium: Virtual Element Methods (Organizers: L. Beirao da Veiga, F. Brezzi, D. Marini, A. Russo), FEF2017, Rome, April 5-7, 2017.
10. *Adaptive Spectral Galerkin Methods with Dynamic Marking*, Oberwolfach Workshop "Adaptive Algorithms" (organized by C. Carstensen and R. Stevenson), 18-24 September 2016.
11. *La cultura della matematica contro il gioco d'azzardo: il MOOC "Scommetti sulla matematica"* (keynote speaker), PL/4: Dalla condivisione alla co-costruzione della conoscenza: i MOOC al servizio della terza missione delle Università (Organizer: S. Sancassani), EMEMITALIA 2016, Modena, September 7-9, 2016
12. *VEM and Topology optimization on polygonal meshes*, Minisymposium: High-Order methods fpr polygonal and polyhedral meshes (Organizers: L. Beirao da Veiga, F. Brezzi, D. Marini, A. Russo), ECCOMAS 2016, Crete, June 5-10, 2016
13. *VEM and Topology optimization on polygonal meshes*, Minisymposium: PDE discretisation methods for polygonal and polyhedral meshes (Organizers: A. Cangiani, G. Manzini and S. Weisser), MAFELAP 2016, Brunel University, United Kingdom, June 14-17, 2016.
14. *A virtual element method for the Cahn-Hilliard problem*, Workshop Polytopal Element Methods in Mathematics and Engineering (POEMS), (Organizers: L. Beirao Da Veiga, A. Gilette, C. Wang) Georgia Tech University, Atlanta, October 26-28, 2015.
15. *An adaptive fictitious domain method for elliptic problems: convergence and optimality properties*, Minisymposium: Unfitted discretization methods for PDEs on embedded manifolds and coupled manifold-bulk problems (Organizer: L. Formaggia), X-DMS 2015-Extended Discretization Methods-Eccomas Conference, Ferrara, September 9-11, 2015.
16. *An Adaptive Fictitious Domain Method*, Minisymposium: Metodi numerici per le equazioni alle derivate parziali (Organizer: C. Canuto), Convegno UMI 2015, Siena, September 7-12, 2015.
17. *A* C^1 *virtual element method for the Cahn-Hilliard equation with polygonal meshes*, Minisymposium: Applications of the Virtual Element Method (Organizers: L. Beirao da Veiga, F.Brezzi, D. Marini, A. Russo), GAMM 2015, Lecce, March 23-27, 2015.
18. *A Two-Level Method for Mimetic Finite Difference Discretizations of Elliptic Problems*, Minisymposium: Innovative compatible and mimetic discretization of pdes (Organizers: A. Cangiani and M. Manzini), MAFELAP 2013, Brunel University, United Kingdom, June 10-14, 2013.

19. *Mimetic finite difference approximation of quasi-linear elliptic problems*, Workshop on Discretization methods for Polygonal and Polyhedral Meshes, (Organizers: L. Beirao da Veiga, A. Cangiani, M. Manzini and A. Russo), University of Milano Bicocca, Italy, September 17-19 2012.
20. *Hierarchical a posteriori error estimators for the mimetic discretization of elliptic problems*, Mynisimposium: Error estimation and adaptive mesh generation, (Organizers: K.G. van der Zee, S. Perotto, E.H. van Brummelen, S. Prudhomme), ECCOMAS 2012, Wien, Austria, September 10-14, 2012
21. *A multigrid algorithm for shape optimization*, Minisymposium: Approximation and Optimization in Some Systems from Mechanics, (Organizers: D. Tiba and C. Murea), 25th IFIP-TC7 on System Modeling and Optimization, Berlin, Germany, September 12-16, 2011.
22. *A mimetic discretization of variational inequalities*, Minisymposium: Finite Volumes and Mimetic Discretization (Organizers: A. Cangiani, M. Manzini), ENUMATH 2011, Leicester University, UK, September 5-9, 2011.
23. *AFEM for shape optimization*, Workshop on Partial differential equations, optimal design and numerics (Organizers: G. Buttazzo, E. Zuazua), Benasque, Spain, August 29 - September 9, 2011.
24. *Adaptive Finite Elements for Shape Optimization Problems*, Minisymposium: Finite Elements and Geometry (Organizers: A. Duester, E. Rank, Y. Bazilevs), MAFELAP 2009, Brunel University, UK, June 9-12, 2009.
25. *A Safeguarded Dual Weighted Residual Method*, Giornata di Lavoro su "Robustezza di stimatori a posteriori" (Organizer: A. Veeser), Università degli Studi di Milano, Italy, September 18, 2007.
26. *Discrete Gradient Flows for a Shape Optimization problem*, Workshop on PDEs, optimal design and numerics (Organizers: G. Buttazzo, E. Zuazua), Benasque, Spain, August 26 - September 7, 2007.

Other Lectures

1. *The conforming virtual element method for polyharmonic problems* Minisymposium: " Polygonal and Polyhedral Methods in Applied Mathematics", ICIAM 2019, July 15-19 2019, Valencia, Spain.
2. *A nonconforming Virtual Element Method for a biharmonic problem on polygonal meshes*, Conference: Advanced Numerical Methods: Recent Developments, Analysis and Applications - IHP quarter on Numerical Methods for PDEs (Organizers: P. F. Antonietti, J. Droniou, R. Eymard), IHP Paris, October 3-7, 2016
3. *Mimetic finite differences for nonlinear and control problems*, Enumath 2013, August 26-30, 2013, Lausanne, Switzerland.
4. *Adaptive Finite Elements for Shape Optimization problems*, SIMAI 2010, June 21-25, 2010, Cagliari, Italy.
5. *A posteriori control of the boundary for FEM approximation of elliptic eigenvalue problems*, SIMAI 2010, June 21-25, 2010, Cagliari, Italy.
6. *Adaptive Finite Elements for Shape Optimization Problems*, Enumath 2009, June 29 - July 3, 2009, Uppsala, Sweden.
7. *An Adaptive Gradient-DWR Finite Element Algorithm for an Optimal Control Constrained Problem*, Simai 2008, September 15-19, 2008, Rome, Italy.

8. *Discrete Gradient Flows for a Shape Optimization Problem*, Enumath 2007, September 10-14, 2007, Graz, Austria.
9. *A Discrete Gradient Flow for a Shape Optimization Problem*, IHP Breaking Complexity - Young Researcher's Meeting, Paris, September 2006.
10. *A Discrete Gradient Flow for a Shape Optimization Problem*, IHP Breaking Complexity - Final Meeting , Vienna, September 2006.
11. *A Finite Element Formulation for a Shape Optimization Problem*, Gamm2006, March 27-31, 2006, Berlin.
12. *Un Metodo agli Elementi Finiti per un problema di Ottimizzazione di Forma*, Convegno Nazionale GNCS, February 14-16, 2006, Milano.
13. *A Finite Element Method for a Shape Optimization Problem*, The Third European Finite Element Fair, June 3-4, 2005, Pavia.
14. *Three fields formulation and nonlinear approximation*, IHP network Workshop on Nonlinear Approximation and Adaptivity: Breaking Complexity in Numerical Modeling and Data Representation, Paris, November 2003.
15. *On the evaluation of linear functional: a possible paradigm*, XVII Congresso Nazionale dell'Unione Matematica Italiana, September 8-13, 2003, Milano.
16. *An adaptive Newton method based on wavelets*, SIMAI 2002, May 27-31, 2002, Chia Laguna (Cagliari).
17. *A wavelet based adaptive scheme for the solution of nonlinear equations*, Enumath 2001, July, 23-28, 2001, Ischia (Napoli).
18. *A Nonlinear Wavelet Newton method for the solution of nonlinear problems*, TMR network Workshop on Wavelets and Multiscale Methods in Numerical Analysis and Simulation, Marseille, June 2001
19. *A Nonlinear Richardson method for the solution of PDEs*, TMR network Workshop on Wavelets and Multiscale Methods in Numerical Analysis and Simulation, Paris, June 2000.

INVITED SEMINAR TALKS

1. *Convergence and Optimality of hp-AFEM*, Mathematics and Applications Sussex Seminar (MASS), Department of Mathematics, University of Sussex, June 6, 2019.
2. *Virtual Element approximation of polyharmonic problems*, Numerical Analysis Seminar, Department of Mathematics, University of Leicester, June 11, 2019.
3. *Virtual Element approximation of minimal surface problems*, Industrial and Applied Mathematics and Scientific Computing seminar at Nottingham, Department of Mathematics, University of Nottingham, June 13, 2019.
4. *The Virtual Element Method for linear and nonlinear fourth order problems*, Numerical Analysis Seminar, Department of Mathematics, University of Konstanz, November 23, 2017.
5. *A nonconforming Virtual Element Method for a biharmonic problem on polygonal meshes*, Numerical Anal-

ysis Seminar, Department of Mathematics, University of Geneve, Switzerland, April 11, 2017.

6. *Adaptive High-Order Methods*, Numerical Analysis Seminar, Department of Mathematics, University of Maryland, USA, March 11, 2014.
7. *Adaptive-Fourier Galerkin methods*, Numerical Analysis Seminar, Department of Mathematics, EPFL, Switzerland, December 5, 2013.
8. *A mimetic discretization of optimal control and quasi-linear elliptic problems*, Numerical Analysis Seminar, Department of Mathematics, University La Sapienza, Rome, Italy, May 14, 2013.
9. *A mimetic discretization of quasi-linear elliptic problems*, Numerical Analysis Seminar, Department of Mathematics, University of Bologna, Italy, February 21, 2013.
10. *A mimetic discretization of elliptic obstacle problems*, Numerical Analysis Seminar, Department of Mathematics, University of Wuerzburg, Germany, July 5 2012.
11. *Mathematical modeling for the textile industry*, Department of Mathematics, University of Bergamo, Italy, June 5, 2012.
12. *A mimetic discretization of elliptic obstacle problems*, Numerical Analysis Seminar, Department of Mathematics, University of Maryland, USA, May 1, 2012.
13. *An adaptive SQP method for shape optimization problems*, IMATI-CNR, Pavia, November 17, 2009.
14. *A Safeguarded Dual Weighted Residual Method*, Numerical Analysis Seminar, Department of Mathematics, Texas A&M University, USA, November 11, 2008.
15. *A Safeguarded Dual Weighted Residual Method*, Numerical Analysis Seminar, Department of Mathematics, University of Maryland, USA, February 12, 2008.
16. *A Safeguarded Dual Weighted Residual Method*, Instituto de Matemática Aplicada del Litoral, Santa Fe, Argentina, August 21, 2007.
17. *Discrete Gradient Flows for a Shape Optimization problem*, Politecnico di Torino, Department of Mathematics , Torino, Italy, May 15, 2007.
18. *Discrete Gradient Flows for a Shape Optimization problem*, Universidad Autonoma de Madrid, Departamento de Matematicas, Madrid, Spain, March 13, 2007.
19. *Shape Optimization: Applications and Numerical Approximation*, Instituto de Matemática Aplicada del Litoral, Santa Fe, Argentina, October 18, 2005.
20. *A Finite Element Formulation for a Shape Optimization Problem*, Numerical Analysis Seminar, Department of Mathematics, University of Maryland, USA, November 22 2005.
21. *Shape Optimization: Applications and Approximation*, Seminario Informale di Matematica Applicata, Department of Mathematics, University of Pavia, Pavia, Italy, October 11, 2005.
22. *On the control of output linear functionals*, Numerical Analysis Seminar, Department of Mathematics, University of Maryland, College Park, USA, April 13, 2004.
23. *Nonlinear wavelet methods for the solution of PDEs*, IMATI-CNR, Pavia, May 21, 2002.

ORGANIZATION OF WORKSHOPS AND MINISYMPOSIA

1. (Upcoming) International Workshop POEMS 2021- Polytopal Element Methods in Mathematics and Engineering (with: S. Brenner, H. Chi, A. Gillette, M. Manzini, A. Russo), USA.
2. Minisymposium: "Numerical Methods for Partial Differential Equations" (with Lourenco Beirao da Veiga), UMI Conference, September 2-7, 2019, Pavia, Italy.
3. Minisymposium: " Polygonal and Polyhedral Methods in Applied Mathematics" (with David Mora), ICIAM 2019, July 15-19 2019, Valencia, Spain.
4. Minisymposium: "Recent Advances in Nonconforming and Polygonal Methods for Partial Differential Equations" (with Paola Antonietti, Stefano Scialo', and Pietro Zanotti), SIMAI 2018, July 2-6 2018, Rome, Italy.
5. Minisymposium: "Polyhedral methods and application" (with Paola Antonietti, Stefano Berrone, Daniele Di Pietro), ENUMATH 2017, September 25-29 2017, Voss, Norway.
6. Workshop: "POEMS 2017: Polytopal Element Methods in Mathematics and Engineering" (with: P.F. Antonietti, L. Beirao Da Veiga, F. Brezzi, A. Russo, G. Vacca), July 5-7 2017, Milano, Italy. (upcoming).
7. Minisymposium: "Advances in polygonal and polyhedral methods" (with P. F. Antonietti, L. Beirao da Veiga), SIMAI 2016, September 13-16 2016, Milan, Italy.
8. Minisymposium: "Polygonal and Polyhedral Methods" (with P.F. Antonietti and L. Beirao Da Veiga), X-DMS 2015-Extended Discretization Methods - Eccomas Conference, Ferrara, September 9-11, 2015.
9. Workshop: "Numerical approximation of PDEs: adaptivity, error control and convergence. In occasion of R. H. Nochetto's 60th birthday", (with A. Bonito, O. Lakkis, P. Morin, A. Veeser and C. Zhang), 20-22 March 2013, Gargnano, Italy.
10. Mynisymposium: "Numerical modelling for engineering applications involving complex fluids and geometries", (with S. Berrone), SIMAI 2012, June 25-28, 2012, Turin, Italy.
11. Mynisymposium: "Shape and topology optimization: applications and numerical methods", (with A. Novotny), Workshop on Partial differential equations, optimal design and numerics, August 2011, Benasque, Spain.
12. Mynisymposium: "Domain Decomposition Methods, Iterative Solvers and Adaptive Method", (with B. Ayuso de Dios, S. Perotto, S. Scacchi), SIMAI 2010, June 21-25, 2010, Cagliari, Italy.
13. Mynisymposium: "Control and Optimization with Partial Differential Equations" (with A. Borzí and M. Annunziato), SIMAI 2010, June 21-25, 2010, Cagliari, Italy.
14. Mynisymposium: "Matematica ed Impresa: l'Esperienza del MOX", (with S. Perotto and A. Quarteroni), SIMAI 2008, September 15-19, 2008, Rome, Italy.
15. Young Researcher's Minisymposium " Numerical analysis of partial differential equations" (with S. Bartels), GAMM 2006, March 27-31, 2006, Berlin, Germany.

REFEREEING ACTIVITY

Applied Numerical Mathematics

Calcolo

Computers & Mathematics with Applications

Computer Methods in Applied Mechanics and Engineering

Interfaces and Free Boundaries

IMA journal of Numerical Analysis

Journal of Scientific Computing

Mathematical Models and Methods in Applied Sciences

Mathematics of Computation

Mediterranean Journal of Mathematics

Numerische Mathematik

SIAM Journal of Numerical Analysis

SIAM Journal on Control and Optimization

SIAM Journal on Scientific Computing

Mathematical Reviews

Netherlands Organisation for Scientific Research (NWO) - Division for Physical Sciences

FONDECYT-Chile

SUPERVISED STUDENTS

Post-Doc

1. 01/08/2019-31/12/2020: Vanessa Covello (Research Topic: Topology Optimization of industrial burners). Supported by EU Project Burner 4.0 (co-supervised with N. Parolini).
2. 01/04/2018-31/03/2020: Domenico Brunetto (Research Topic: Innovative Math teaching activity to foster social inclusion of young migrant). Supported by 5 per mille Polisocial Award Project TEEN (co-supervised with N. Parolini). Supported by 5 per mille Polisocial Award Project TEEN.
3. 01/04/2014 - 31/03/2016: Abramo Agosti (Research Topic: Numerical methods for diffuse interface tumor growth model). Supported by FARB project "Diffuse interface tumor-growth models" of Politecnico di Milano.(co-supervised with P. F. Antonietti).
4. 15/10/2013 - 15/10/2015: C. Andrà (Research Topic: Mathematics education for problem gambling prevention). Supported by 5 per mille Polisocial Award Project BetOnMath (co-supervised with N.

Parolini).

5. 15/04/2011 - 15/04/2013: A. Tavakoli (Research Topic: Mathematical and Numerical Modelling of fluidodynamics of textile patches. Supported by Regione Lombardia and Carvico Spa within the Project "Dote Ricerca Applicata")(co-supervised with P. F. Antonietti).
6. 15/07/2008 - 15/03/2011: A. Tavakoli (Research Topic: Mathematical and Numerical Modelling of the structural propetries of textile patches. Supported by FIRB *Materiali e tecnologie innovativi per il tessile italiano (MTIT))*
7. 01/03/2010 - 01/09/2010: T. Karvinen (Research topic: Numerical simulation of the extrusion process of textile fibers). Supported by Tampere University of Technology, Finland (co-supervised with P. F. Antonietti).
8. 01/02/2008 - 31/05/2008: P. F. Antonietti (Research Topic: Mathematicl and numerical modelling of the extrusion process of textile fibers. Supported by FIRB *Materiali e tecnologie innovativi per il tessile italiano (MTIT))*
9. 15/02/2008 - 15/04/2008: M. Piccinelli (Research Topic: Numerical methods for image processing applied to pilling identification. Supported by FIRB *Materiali e tecnologie innovativi per il tessile italiano (MTIT))*

PhD

1. 2016-2019: Giorgio Negrini (PhD in Mathematical Models and Methods for the Engineering - XXXV cycle) (co-supervised with N. Parolini);
2. 2016-2019: Chiara Facciola' (PhD in Mathematical Models and Methods for the Engineering - XXXII cycle) (co-supervised with P.F. Antonietti);
3. 2015-2018: Luca Ratti (PhD in Mathematical Models and Methods for the Engineering - XXXI cycle) (co-supervised with E. Beretta);
4. 2014-2017: Domenico Brunetto (PhD in Mathematical Models and Methods for the Engineering - XXX cycle) (co-supervisor. Supervisor: G. Magli);
5. 2014 - 2017: Mattia Tamellini (PhD in Mathematical Models and Methods for the Engineering - XXX cycle) (co-supervised with N. Parolini)
6. 2014 - 2017: Ivan Fumagalli (PhD in Mathematical Models and Methods for the Engineering - XXX cycle) (co-supervised with N. Parolini)
7. 2011 - 2014: M. Sarti (PhD in Mathematical Models and Methods for the Engineering - XXVII cycle) (co-supervised with P. F. Antonietti)
8. 2011 - 2014: S. Stangalino (PhD in Mathematical Models and Methods for the Engineering - XXVII cycle) (co-supervised with P. F. Antonietti)
9. 2010 - 2013: N. Bigoni (PhD in Mathematical Models and Methods for the Engineering - XXVI cycle) (co-supervised with P. F. Antonietti)
10. 2009 - 2014: E. Repossi (PhD in Mathematical Models and Methods for the Engineering - XXV cycle)

Post-Lauream

1. 01/01/2016-31/12/2018: U. Visconti (Research Topic: Numerical simulation of mixing processes. Supported by industrial consulting contract with Pirelli S.p.a.) (co-supervised with N. Parolini and P.F. Antonietti)
2. 01/01/2012- 31/12/2012: D. Brunetto (Research Topic: Mathematical modeling of the single screw extrusion process for wire coating. Supported by industrial consulting contract with Aristoncavi S.p.a.) (co-supervised with P.F. Antonietti)

Laurea Degree[3]

1. Emiliano Ruberto, An adjoint based topology optimization for flows including heat transfer, Laurea Magistrale in Aerospace Engineering, Politecnico di Milano, A.Y. 2016-17. (Advisors: N. Parolini, M. Verani)
2. Giuseppe Di Sciacca, An algorithm based on topological and shape derivatives for inverse problems in diffuse optical tomography, Laurea Magistrale in Physical Engineering, Politecnico di Milano, A.Y. 2016-17.
3. Regazzoni Francesco, Topology optimization of self-assembling anisotropic materials, Laurea Magistrale in Mathematical Engineering, Politecnico di Milano, A.Y. 2015-16. (Advisors: N. Parolini, M. Verani)
4. Limberto Matteo, Numerical approximation of an optimal control problem with random inputs arising in cardiac electrophysiology, Laurea Magistrale in Mathematical Engineering, Politecnico di Milano, A.Y. 2015-16. (Advisors: A. Manzoni, M. Verani)
5. Facciolà Chiara, Discontinuous Galerkin approximation of flows in fractured porous media, Laurea Magistrale in Mathematics, Università degli Studi di Milano-Bicocca, A.Y. 2014-15. (Advisors: P.F. Antonietti, M. Verani)
6. Cazzaniga Walter, SVD and applications, Laurea di Primo Livello in Mathematical Engineering, Politecnico di Milano, A.Y. 2013-14.
7. Fumagalli Ivan, Shape optimization for Stokes flows : a reference domain approach, Laurea Magistrale in Mathematical Engineering, Politecnico di Milano, A.Y. 2012-13. (Advisors: N. Parolini, M. Verani)
8. Nehemy Alan, Gas mixtures and equations of state: an optimization approach, Laurea Magistrale in Energy Engineering, A.Y. 2011-12, Politecnico di Milano.
9. Ossola Chiara, Mimetic finite difference methods for elliptic equations with highly oscillating coefficients, Laurea Magistrale in Mathematical Engineering, A.Y. 2011-12, Politecnico di Milano. (Advisors: P.F. Antonietti, M. Verani)
10. Simone Stangalino, A multigrid method for MFD discretization of elliptic problems (in english), Laurea Magistrale in Mathematics, Università di Pavia, A.Y. 2010-11 (Advisors: P.F. Antonietti, M. Verani)
11. Riva Christian, Modellazione Matematica del processo di Alluminizzazione, Laurea Magistrale in Mechanical Engineering, A.Y. 2009-10, Politecnico di Milano. (Advisors: E. Gariboldi, M. Verani)
12. Fusi Francesca, Metodi Numerici per l'Ottimizzazione in ambito Aerospaziale, Laurea di Primo Livello

[3]Laurea Magistrale = Master of Science, Laurea di Primo Livello = Bachelor

in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano.

13. Maggioni Alessio, Metodi Numerici per l'Ottimizzazione in ambito Aerospaziale, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano.
14. Ponzo Cesare, Algoritmi numerici per l'ottimizzazione geometrica di elementi strutturali in ambito aeronautico I, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano.
15. Sovardi Carlo, Algoritmi numerici per l'ottimizzazione geometrica di elementi strutturali in ambito aeronautico II, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano.
16. Riggio Francesco, Algoritmi numerici per l'ottimizzazione geometrica di elementi strutturali in ambito aeronautico III, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano.
17. Mencarelli Andrea, Modelli di interazione fluido-membrana e applicazioni in ambito aerodinamico I, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano. (Advisors: C. Vergara, M. Verani)
18. Meschini Andrea, Modelli di interazione fluido-membrana e applicazioni in ambito aerodinamico II, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano. (Advisors: C. Vergara, M. Verani)
19. Sarti Marco, Algoritmi di mesh-adaptation basati su analisi residuale per metodi agli elementi finiti I, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano. (Advisors: P. Antonietti, M. Verani)
20. Sumatra Enrico, Algoritmi di mesh-adaptation basati su analisi residuale per metodi agli elementi finiti II, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano. (Advisors: P. Antonietti, M. Verani)
21. Resmini Andrea, Metodi moving mesh applicati alla risoluzione di equazioni alle derivate parziali, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2008-09, Politecnico di Milano. (Advisors: P. Antonietti, M. Verani)
22. Bernocchi Stefano, Algoritmi Numerici per l'Integrazione e Applicazioni, Laurea di Primo Livello in Mathematical Engineering, A.Y. 2007-08, Politecnico di Milano. (Advisors: P.F. Antonietti, M. Verani)
23. Monterisi Andrea, Applicazioni degli Automi Cellulari allo studio di flussi di detriti: il metodo "SCIDDICA", Laurea Magistrale in Aerospace Engineering, A.Y. 2006-07, Politecnico di Milano.
24. Sist Nicolas David, Un algoritmo di ottimizzazione di forma basato sull'uso delle splines, Laurea di Primo Livello in Mathematical Engineering, A.Y. 2006-07, Politecnico di Milano.
25. Tumolo Giovanni, Un Algoritmo Wavelet GMRES di tipo adattivo, Laurea Magistrale in Aerospace Engineering, A.Y. 2005-06, Politecnico di Milano.
26. Mele Luca, Applicazione di Tecniche di Model Updating ad un modello a elementi finiti torsionali di una turbina a vapore, Laurea Magistrale in Mechanical Engineering, A.Y. 2005-06, Politecnico di Milano. (Advisors: P. Pennacchi, M. Verani)
27. Parrini Andrea, Ottimizzazione di forma di una imbarcazione da canottaggio I, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2005-06, Politecnico di Milano. (Advisors: L. Formaggia, M. Verani)

28. Tagliabue Marco, Ottimizzazione di forma di una imbarcazione da canottaggio II, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2005-06, Politecnico di Milano. (Advisors: L. Formaggia, M. Verani)
29. Isola Dario, Ottimizzazione di forma di una imbarcazione da canottaggio mediante il metodo delle mappe, Laurea di Primo Livello in Aerospace Engineering, A.Y. 2005-06, Politecnico di Milano. (Advisors: L. Formaggia, M. Verani)

MEMBERSHIP

Unione Matematica Italiana (UMI)

Società Italiana di Matematica Applicata ed Industriale (SIMAI)

Gruppo Nazionale Calcolo Scientifico (GNCS-INDAM)

GRADUATE TEACHING

A.Y. 2015-2016

Shape Optimization and Optimal Control Problems meet Polygonal methods for PDEs (with P.F. Antonietti), PhD in Mathematical Models and Methods for Engineering, Dept. of Mathematics, Politecnico di Milano

A.Y. 2008-2009

Numerical Methods for non-linear problems (with P. F. Antonietti e F.Nobile), PhD in Mathematical Models and Methods for Engineering, Dept. of Mathematics, Politecnico di Milano.

UNDERGRADUATE and M.SC. TEACHING

A.Y. 2018-2019

Elements of Mathematics (54h), Architectural Design, Politecnico di Milano - Campus Leonardo (Teacher, Language: english).

Numerical Mathematics (60h), Mathematical Engineering, Politecnico di Milano - Campus Leonardo (Teacher,

Language: italian)

A.Y. 2018-2019

Elements of Mathematics (54h), Architectural Design, Politecnico di Milano - Campus Leonardo (Teacher, Language: english).

Numerical Methods for PDEs (36h), Mathematical Engineering, Politecnico di Milano - Campus Leonardo (Teacher, Language: italian)

Reading Courses (3) for Mathematical Engineering students, Politecnico di Milano.

A.Y. 2017-2018

Elements of Mathematics (54h), Architectural Design, Politecnico di Milano - Campus Leonardo (Teacher, Language: english).

Numerical Methods for PDEs (36h), Mathematical Engineering, Politecnico di Milano - Campus Leonardo (Teacher, Language: italian)

Reading Courses (6) for Mathematical Engineering students, Politecnico di Milano.

A.Y. 2016-2017

Analytical and Numerical Methods for Mechanical Engineering (66h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

Numerical Calculus and Elements of Analysis (66h), Aerospace Engineering, Politecnico di Milano - Campus Bovisa.

A.Y. 2015-2016

Mathematical Methods for Engineering (36h), Physical Engineering, Politecnico di Milano - Campus Leonardo (Teacher, Language: english).

Analytical and Numerical Methods for Mechanical Engineering (72h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

A.Y. 2014-2015

Mathematical Methods for Engineering (36h), Physical Engineering, Politecnico di Milano - Campus Leonardo (Teacher, Language: english).

Analytical and Numerical Methods for Mechanical Engineering (72h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

A.Y. 2013-2014

Analytical and Numerical Methods for Mechanical Engineering (72h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

Numerical Methods for Optimization (36h), Master in Energy Engineering for an Environmentally Sustainable World, Politecnico di Milano - Campus Piacenza (Teacher, Language: english).

A.Y. 2012-2013

Analytical and Numerical Methods for Mechanical Engineering (72h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

Advanced Numerical Methods for Energy Engineering (72h), Master in Energy Engineering for an Environmentally Sustainable World, Politecnico di Milano - Campus Piacenza (Teacher, Language: english).

A.Y. 2011-2012

Analytical and Numerical Methods for Mechanical Engineering (72h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

Advanced Numerical Methods for Energy Engineering (36h), Master in Energy Engineering for an Environmentally Sustainable World, Politecnico di Milano - Campus Piacenza (Teacher, Language: english).

A.Y. 2010-2011

Analytical and Numerical Methods for Mechanical Engineering (72h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

Advanced Numerical Methods for Energy Engineering (36h), Master in Energy Engineering for an Environmentally Sustainable World, Politecnico di Milano - Campus Piacenza (Teacher, Language: english).

A.Y. 2009-2010

Analytical and Numerical Methods for Mechanical Engineering (72h), Mechanical Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Analytical and Numerical Methods for Mechanical Engineering (72h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

Numerical Methods for Shape Optimization and Fluid-Structure Interaction with application to Aerospace Engineering, Reading Course for Aerospace Engineering students, Politecnico di Milano.

Numerical Methods for Aerospace Engineering (36h), Aerospace Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Numerical Methods for Mechanical Engineering (36h), Mechanical Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Numerical Methods for Mechanical Engineering (36h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

A.Y. 2007-2008

Numerical Methods for Aerospace Engineering (36h), Aerospace Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Numerical Methods for Mechanical Engineering (36h), Mechanical Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Numerical Methods for Mechanical Engineering (36h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

A.Y. 2006-2007

Linear Algebra and Numerical Calculus (36h), Mechanical Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Numerical Methods for Mechanical Engineering (36h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

A.Y. 2005-2006

Linear Algebra and Numerical Calculus (36h), Mechanical Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Linear Algebra and Numerical Calculus (36h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teaching Assistant, Teacher: M. Frontini)

Numerical Methods for Mechanical Engineering (36h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teacher, Language: italian).

A.Y. 2004-2005

Numerical Calculus (36h), Mechanical Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Numerical Calculus, Mechanical Engineering, Politecnico di Milano - Campus Lecco (Teaching Assistant, Teacher: S. Perotto)

A.Y. 2003-2004

Numerical Calculus (36h), Mechanical Engineering, Politecnico di Milano - Campus Bovisa (Teacher, Language: italian).

Numerical Methods for Mechanical Engineering, Mechanical Engineering, Politecnico di Milano (Teaching Assistant, Teacher: F. Saleri)

Numerical Methods for Mechanical Engineering (36h), Mechanical Engineering, Politecnico di Milano - Campus Piacenza (Teaching Assistant, Teacher: S. Micheletti)

Introduction to Matlab (10h), Informatic Engineering, Politecnico di Milano (Teacher, Language: italian).

A.Y. 2002-2003

Numerical Analysis (72h), Electronic Engineering, Università di Pavia - Campus Mantova (Teacher, Language: italian).

Numerical Calculus, Mechanical Engineering, Politecnico di Milano (Teaching Assistant, Teacher: A. Veneziani)

Numerical Calculus, Mechanical Engineering, Politecnico di Milano (Teaching Assistant, Teacher: R. Sacco)

Numerical Calculus, Aerospace Engineering, Politecnico di Milano (Teaching Assistant, Teacher: F. Saleri)

A.Y. 2001-2002

Numerical Analysis (72h), Electronic Engineering, Università di Pavia - Campus Mantova (Teacher, Language: italian).

Linear Algebra, Electronic Engineering, Università di Pavia (Teaching Assistant, Teacher: M. Grieco)

A.Y. 2000-2001

Linear Algebra, Electronic Engineering, Università di Pavia (Teaching Assistant, Teacher: M. Grieco)

Approximation Methods I, Mathematics, Università di Milano (Teaching Assistant, Teacher: L. Pavarino)

A.Y. 1999-2000

Numerical Calculus, Chemical Sciences, Universtà di Pavia (Teaching Assistant, Teacher: L. Della Croce)

Analysis II, Geological Sciences, Università di Pavia (Teaching Assistant, Teacher: G. Toscani)

SERVICE ACTIVITY AT POLITECNICO DI MILANO

25/07/2013-present: Member of the Steering Committee of the PhD School in Mathematical Models and Methods in Engineering of the Department of Mathematics, Politecnico di Milano.

2019: Member of the Hiring Committee for a Junior Researcher in Mathematics Education at the Department of Mathematics, Politecnico di Milano.

2019: member of 3I-School woking group on "Didattica Laboratoriale" (Teaching with Labs). Chair: M. Passoni

2003-present: service at Polimi-OPENDAY (Mathematical Engineering: helpdesk and public presentation)

2013-present: service at MeetMeTonight (stand of Department of Mathematics)

2018: Member of the Hiring Committee for a Senior Researcher in Numerical Analysis at the Department of Mathematics, Politecnico di Milano.

2008-present: Member of 18 Committees for selecting research fellows at the Department of Mathematics, Politecnico di Milano.

2008-present: Member of 9 Committees for selecting teaching assistants at the Department of Mathematics, Politecnico di Milano.

28/02/2018: Participant in the Focus Group FEEDBACK (organized by METID on the practice of feedback in teaching activities)

13/02/2018: Member of the Final defense PhD Committee (Candidates: Caterina Bassi, Georgios Bellas, Alessandro Della Rocca), PhD in Mathematical Models and Methods in Engineering, Politecnico di Milano.

2017: Member of the Hiring Committee for a Senior Researcher in Numerical Analysis at the Department of Mathematics, Politecnico di Milano.

03/02/2017: Member of the Final defense PhD Committee (Candidates: Dr. Diana Bonomi, Dr. Alberto Ferroni, Dr. Stefano Pagani), PhD in Mathematical Models and Methods in Engineering, Politecnico di Milano.

19/07/2016: Member of the Final defense PhD Committee (Candidate: Dr. Marianna Signorini), PhD in Mathematical Models and Methods in Engineering, Politecnico di Milano.

2012: Member of the Committee for TOL - Test On Line (admission test to Politecnico di Milano) at Piacenza district prison.

2008-2015: Organizing MOX-Seminars at Department of Mathematics, Politecnico di Milano.

2008-2010: Member of the Committee for Teaching Innovation, Industrial Engineering School, Politecnico di Milano.

19/11/2007-19/11/2008: Member of the Steering Committee of the PhD School in Mathematical Engineering of the Department of Mathematics, Politecnico di Milano.

SERVICE ACTIVITY OUTSIDE POLITECNICO DI MILANO

2/12/2019: Member of the Final defense PhD Committee (Candidate: Dr. Pichler Alexander), PhD in Mathematics, University of Wien.

12/07/2019: Member of the Final defense PhD Committee (Candidates: Dr. Fabio Vicini), PhD in Mathematics for Engineering Sciences, Politecnico di Torino.

2019: Member of the Committee for selecting a Senior Researcher (Type B) in Numerical Analysis, Department of Mathematics - Politecnico di Torino.

22/03/2017: Member of the Final defense PhD Committee (Candidate: Dr. Andrea Borio), PhD in Mathematics for Engineering Sciences, Politecnico di Torino.

2017: Member of the Committee for selecting a CNR scientific collaborator at IMATI, Pavia.

24/03/2016: Member of the Final defense PhD Committee (Candidate: Dr. Matias Benedetto), PhD in Mathematics for Engineering Sciences, Politecnico di Torino.

2016: Member of the Committee for selecting a CNR scientific collaborator at IMATI, Pavia.

08/10/2013: Member of the Final defense PhD Committee (Candidate: Dr. Alessandro Adamo), PhD in Mathematics and Statistics for computational sciences, Università degli Studi di Milano.

ACTIVITY TO BRIDGE HIGH SCHOOL AND UNIVERSITY

Co-Organization (with C. Andrà, D. Brunetto, N. Parolini) of MATEC week (High school student orientation week on Applied Math at Politecnico di Milano), 2017.

Lecture on "How to organize studying activity at the University" (for students of last year of high school), Politecnico di Milano-Campus Piacenza, May 2016.

Lecture on "How to organize studying activity at the University" (for students of last year of high school), Politecnico di Milano-Campus Piacenza, May 2014.

Lecture on "How to organize studying activity at the University" (for students of last year of high school), Politecnico di Milano-Campus Piacenza, May 2013.

Lecture on "Simulare e prevedere con la Matematica: tra funzione e finzione", Workshop PURA O APPLICATA? La Matematica tra teoria e problemi (Organized by Pristem-University Bocconi and University of Padua), April 3013.

Lecture on "Mathematics and Models", Università Bocconi, Orientamatica 2011-2012 (organized by Organized by Pristem-University Bocconi), December 2011.

Lecture on "How to organize studying activity at the University" (for students of last year of high school), Politecnico di Milano-Campus Piacenza, April 2011.

Tutor of the project "Modellizzazione Matematica di un Forno" (realized by students of Liceo Scientifico Respighi,

Piacenza) for the participation to the contest *Fast : I giovani e le Scienze*, April 2008.

Teacher of the course "Introduction to Scientific Calculus" (30 hours) for Piacenza high school teachers of mathematics (supported by Politecnico di Milano - campus Piacenza and by Mathesis - Piacenza), September 2007 - January 2008.

Lecture at Workshop "Laboratorio in Matematica" (organized by Politecnico di Milano - campus Piacenza and by Mathesis - Piacenza), Piacenza, April 2007.

Lecture at the Workshop "Scienze in Primo Piano" (organized by Ufficio Scolastico Regione Lombardia and by Fondazione Quadrivio - Gruppo Credito Valtellinese), Sondrio, February 2007.

DISSEMINATION AND POPULARIZATION OF MATHEMATICS

Projects

TEEN. Goal: promoting mathematics as a social tool to integrate young migrantes and refugees into our society.

I-Lab Mathematics (http://www.museoscienza.org/visitare/ilab-matematica/). Goal: To project and develop a permament Lab of Mathematics at the Museo della Scienza e della Tecnologia di Milano.

BetOnMath (`http://betonmath.polimi.it`). Goal: promoting the knowledge of probability among high school students to reduce gambling abuse

MathInside (`http://www.museoscienza.org/scuole/progettiScuole_det.asp?idprogetto=134`). Goal: promoting the knowledge of mathematics behind social networks and gambling games.

MOOC (Massive Open Online Course) "BetOnMath for Citizens" (`http://betonmath.polimi.it/mooc`). Goal: promoting the knowledge of probability among citizens to reduce gambling abuse

Written contributions

E. Miotto, N. Parolini and M. Verani, "Sperimentare e scoprire in un laboratorio di matematica", Maddmath, 2019 (http://maddmaths.simai.eu/divulgazione/sperimentare-e-scoprire-in-un-laboratorio-di-matematica/)

N. Parolini and M. Verani, "BetOnMath: matematica civile contro l'ignoranza sul gioco d'azzardo", Maddmath, 2013 (http://maddmaths.simai.eu/divulgazione/bethonmath-matematica-civile-con tro-lignoranza-sul-gioco-dazzardo/)

N. Parolini and M. Verani, "Un progetto di Matematica Civile. BetOnMath: Matematica e gioco d'azzardo", MATEpristem, 2013 (http://matematica.unibocconi.it/articoli/un-progetto-di-matematica-civile-betonmath-matematica-e-gioco-dazzardo).

C. Andrà, D. Brunetto, N. Parolini and M. Verani, Una scommessa sulla matematica a scuola, Nuova Secondaria, 10(2018): 34–37.

C. Andrà, N. Parolini and M. Verani, BetOnMath: un progetto di Matematica civile contro l'abuso del gioco d'azzardo, Quaderno n. 15, Dipartimento di Matematica e Fisica del Liceo Scientifico Respighi (https://sites.google.com/a/liceorespighi.it/mate-fisica/mercoledi/quaderni/quaderno-15)

C. Andrà, N. Parolini and M. Verani, "L'analfabetismo matematico e l'illusione di vincere". In: C. Cefaloni (Ed.) Vite in gioco. Oltre la slot economia. Ed. Città Nuova, 2014.

P. F. Antonietti and M. Verani, "Matematica applicata ai tessuti: uno stile tutto da dimostrare", Newton, 02/2010

Talks

Scommetti sulla Matematica per sconfiggere il gioco d'azzardo (Corso di Formazione per operatori socio-sanitari-Training course for healthcare social workers), Dipartimento delle Dipendenze, ULSS 9, Legnago (VR), 28 October 2019.

BetOnMath: scommetti sulla matematica, VI Convegno in ricordo di G. Marveggio - "Certo, certissimo...anzi probabile", Sondrio, 4 May 2019.

Azzardo e matematica a scuola, Azzardiamoci!-Peer in gioco, Treviglio (BG), 24 October 2018.

Azzardo e matematica a scuola, Azzardiamoci!-Peer in gioco, Castione della Presolana (BG), 5 September 2018.

BethOnMath - Azzardo e matematica a scuola, Generation online - Gioco d'azzardo nel lavoro con i bambini e i giovani, Libera Università di Bolzano, Bolzano, 10 novembre 2017.

Educazione civica con la Matematica - BetOnMath contro l'abuso del gioco d'azzardo, Percorso Chiavi di Lettura, Associazione Culturale "Il Contastorie ", Alessandria, 13 March 2017.

BetOnMath: la matematica come strumento preventivo, Polo Sardegna dell'Accademia Nazionale dei Lincei, "Una nuova didattica nella scuola", Cagliari e Sassari , 3-4 marzo 2017.

Educazione civica con la Matematica - BetOnMath contro l'abuso del gioco d'azzardo, BERGAMOSCIENZA, Bergamo, 14 October 2016.

BetOnMath: Matematica civile e gioco d'azzardo, Tavola Rotonda "Noi non ci azzardiamo", Cesano Maderno, 18 febbraio 2016.

Gli scritti di Calvino letti da un matematico, Centro di Cultura Università Cattolica, Alessandria, February 2016.

Il Metodo di Newton: dai Babilonesi ai giorni nostri passando per i pub londinesi, Seminari FDS, Dipartimento di Matematica, Politecnico di Milano, 4 November 2015.

BetOnMath: Matematica civile e gioco d'azzardo, Lectures at: IS "Sobrero" Casale Monferrato, Lions Voghera, Soroptimist Pavia, MediaExpo2015 Crema, 2015

A spasso con la matematica (with N. Parolini), FOCUS JUNIOR Seminars, Politecnico di Milano, March 2015.

BetOnMath: Matematica civile e gioco d'azzardo, Mercoledi della Scienza, Piacenza, November 2014.

BetOnMath, scommettere sulla Matematica per prevenire l'abuso del gioco d'azzardo: una proposta didattica (with C. Andrà and N. Parolini), Convegno "Giochi, Modelli, Storia", Centro PRISTEM, Università Bocconi, Milano, 3 October 2014.

Cultura umanistica e scientifica, rileggendo le Lezioni Americane di I. Calvino, Società Dante Alighieri, Cremona, April 2013.

Milan, 10 december 2019

Marco Verani