CURRICULUM VITAE

Personal information

Name / Surname	**Sara Remogna**
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Personal Email	sara.remogna@unito.it
Nationality	Italian
Date of birth	21/09/1982

Work Experience

Dates	**01/10/2021 – present**
Occupation or position held	Associate Professor of Numerical Analysis (MAT/08)
Name and address of employer	Department of Mathematics "Giuseppe Peano", University of Torino
	Via Carlo Alberto 10, 10123, Torino, Italy
Dates	**01/11/2007 – 30/09/2021**
Occupation or position held	Assistant Professor of Numerical Analysis (MAT/08)
Name and address of employer	Department of Mathematics "Giuseppe Peano", University of Torino
	Via Carlo Alberto 10, 10123, Torino, Italy

Education and training

Dates	**28/03/2017**
Title of qualification awarded	National Scientific Qualification as Associate Professor in Numerical Analysis,
Name and type of organisation providing education and training	Ministry of Education, University and Research (MIUR, ITALY)
Dates	**01/2010**
Title of qualification awarded	Ph.D. degree in Science and High Technology - Specialization in Mathematics
Name and type of organisation providing education and training	Doctoral School of Science and High Technology, University of Torino
Title of qualification awarded	Ph.D. degree in Mathematics and Applications
Name and type of organisation providing education and training	Doctoral School MATISSE (Mathematics, Telecommunications, Computer Science, Signal Systems, Electronics), University of Rennes 1
Principal subjects occupational skills covered	Ph.D. degree with an international joint supervision of Ph.D. agreement (with double degree) between the Doctoral School of Science and High Technology, Specialization in Mathematics, University of Torino and the Doctoral School MATISSE, Specialization in Mathematics and Applications, Rennes 1 University.
	Ph.D. Thesis " *Local spline quasi-interpolants on bounded domains of* $\mathbb{R}^2$ *and* $\mathbb{R}^3$", supervisors Prof. C. Dagnino (University of Torino) and Prof. P. Sablonniére (Rennes 1 University).
Dates	**07/2006**
Title of qualification awarded	Two-year Master's degree *cum laude* in Mathematics
Name and type of organisation providing education and training	University of Torino
Dates	**07/2004**
Title of qualification awarded	Three-year Bachelor's degree *cum laude* in Mathematics
Name and type of organisation providing education and training	University of Torino

Research activities

Research sectors	- Univariate and multivariate spline approximation (see the references [P44, P43, P40, P39, P34, P31, P30, P28, P27, P26, P23, P20, P17, P15, P14, P11, P10, P9, P8, P6, P2, P1, T2, T1]). - Numerical methods for CAGD (Computer Aided Geometric Design) (see the references [P37, P32, P21, P19, P13, P3]). - Numerical integration with applications (see the reference [P16]). - Numerical methods for the solution of differential and integral problems based on spline approximation (see the references [P42, P41, P38, P35, P29, P25, P24, P22, P18, P12, P7, P5]). - Mathematical models for disease propagation (see the reference [P4]). - Collaboration in a project on teaching Mathematics in scientific Bachelor Degrees using a blended approach (see the reference [P36, P33]).
Recent Scientific Activities	******** **Research grants** ******** ● **Principal investigator of the following research projects:** - *Numerical methods based on spline approximation and applications*, Grant for Internationalization - GFI - Programmazione Triennale 21-23, funded by the University of Torino, 2023. - *Approximation of 2D and 3D curves and surfaces with applications to object modelling*, CNR-CNRST of Morocco, in collaboration with Prof. Driss Sbibih, 2020-2021. - *Spline models for the reconstruction and representation of 3D and 4D data*, National Group for Scientific Computing (GNCS), 2016. - *Uni and multivariate spline schemes for the data reconstruction and for integral problems*, University of Torino 2016-2017. - *Approximation schemes based on splines and generalized splines, associated to T-meshes* – "Linea Giovani ricercatori", University of Torino, 2013. ● **Beneficiary of the following grants:** - Grant of the National Group for Scientific Computing (GNCS) for the organization of the congress MACMAS 2023, Mathematical and Computational Modelling, Approximation and Simulation – New trends, recent developments and applications in environment and natural resources, Torino, Italy, 29/05-01/06/2023. - Grant of the Department of Mathematics, University of Torino, for the organization of the congress MACMAS 2023, Mathematical and Computational Modelling, Approximation and Simulation – New trends, recent developments and applications in environment and natural resources, Torino, Italy, 29/05-01/06/2023. - Grant of the Department of Mathematics, University of Torino, for the organization of the congress SMART 2022, 3rd International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in ITaly, Rimini, Italy, 20-24/09/2022. - Visiting Professor Program funded by GNCS for the invitation of Prof. Chong-Jun Li (Dalian University of Technology, China) at the University of Torino, 2018. - Grant for Fundamental Research (FFABR) of the Ministry of Education, University and Research (MIUR, ITALY), 2017. - Grant of the Department of Mathematics, University of Torino, for the organization of the workshop NuMA 2018, International Workshop on Numerical Mathematics and its Applications, Torino, Italy, 19-21/09/2018. - Grant of the Department of Mathematics, University of Torino, for the organization of the congress SMART 2017, 2nd International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in ITaly, Gaeta, Italy, 17-21/09/2017. - Grant of the Department of Mathematics, University of Torino, for the organization of the congress SMART 2014, 1st International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in Tuscany, Pontignano, Italia, 28/09-01/10/2014. - Young Researcher Program funded by GNCS, 2012. ● **Member of the following research projects:**

- *Innovative spline techniques for approximation and adaptive isogeometric methods*, National Group for Scientific Computing (GNCS), 2023.

- *Analysis of methods and algorithms in approximation theory and models in biology and ecology*, University of Torino, 2023.

- *Approximation methods and models for life sciences*, University of Torino, 2022.

- *Numerical methods for approximation and life sciences*, University of Torino, 2021.

- *Innovative methods for wave propagation problems on unbounded domains: theoretical and computational aspects*, National Group for Scientific Computing (GNCS), 2020.

- *Numerical models and methods in approximation, applied sciences and life sciences*, University of Torino, 2020.

- *Local approximation methods with applications to Isogeometric Analysis and boundary integral equations*, National Group for Scientific Computing (GNCS), 2019.

- *Current problems of numerical approximation and applications*, University of Torino, 2019.

- *Mathematics for Applications*, University of Torino, 2018.

- *Multivariate approximation and efficient algorithms with applications to algebraic, differential and integral problems*, University of Torino, 2016-2017.

- *Mathematical and computational models for the representation of complex geometries*, National Group for Scientific Computing (GNCS), 2015.

- *Numerical models for the approximation of 3D and 4D data*, University of Torino, 2015.

- *Spline approximation for integral problems*, University of Torino, 2014.

- *Interpolation techniques for PDEs*, University of Torino, 2014.

- *Uni and multivariate spline approximation methods for integral problems*, University of Torino, 2013.

- *New multivariate spline spaces for numerical modelling and watermarking*, University of Torino, 2012.

- *Multivariate spline approximation and applications*, Department of Mathematics - University of Torino, 2011.

- *NURBS surfaces and Isogeometric Analysis*, University of Torino, 2009.

- *B-spline techniques for CAGD and Scientific Computation*, University of Torino, 2008.

- *Constructive methods in new frames of spline and radial basis numerical approximation*, University of Torino, 2007.

******** **Conference organization** ********

• **Co-organizer and member of the Scientific Committee of MACMAS 2023**, Mathematical and Computational Modelling, Approximation and Simulation – New trends, recent developments and applications in environment and natural resources, Torino, Italy, 29/05-01/06/2023.

• **Member of the Scientific and Organizing Committee of SMART 2022**, 3rd International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in ITaly, Rimini, Italy, 20-24/09/2022.

• **Member of the Scientific Committee of NT2A'22**, International Symposium on New Trends in Approximation and Applications, Oujda, Morocco, 27-28/06/2022.

• **Member of the Local Organizing Committee of MPDEE 2022**, Models in Population Dynamics, Ecology and Evolution, Torino, Italy, 13-17/06/2022.

• **Member of the Local Organizing Committee of SA2022**, Software for Approximation, Torino, Italy, 3-4/02/2022.

• **Co-organizer of the minisymposium "Advances in Spline Applications"** during the SIMAI National Congress (SIMAI 2020+2021), Parma, Italy, 30/08-03/09/2021.

• **Co-organizer and member of the Scientific Committee of MACMAS 2019**, Mathematical and Computational Modelling, Approximation and Simulation – New trends, recent developments and applications in environment and natural resources, Granada, Spain, 9-11/09/2019.

• **Co-organizer of NuMA 2018**, International Workshop on Numerical Mathematics and its Applications, Torino, Italy, 19-21/09/2018.

- **Co-organizer of the minisymposium "Recent Advances in Quasi-Interpolation and Applications"** during the SIMAI National Congress (SIMAI 2018), Roma, Italy, 02-06/07/2018.
- **Member of the Organizing Committee of SMART 2017**, 2nd International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in ITaly, Gaeta, Italy, 17-21/09/2017.
- **Member of the Organizing Committee of SMART 2014**, 1st International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in Tuscany, Pontignano, Italy, 28/09-01/10/2014.
- **Co-organizer of workshops on Multivariate Spline Approximation** in scientific exchanges among University of Torino and the Institut National des Sciences Appliquès (INSA) Rennes, University of Torino, 04/2008.

******** **Research visits** ********

- **Visiting Professor** at the University of València (Spain), 11/2022.
- **Visiting Professor** at the University Jean Monnet, Saint-Etienne (France), 06/2019.

- **Visiting Professor** at the School of Mathematical Sciences, Dalian University of Technology (China), 12/2018.
- **Visiting Professor** at the Department of Applied Mathematics, University of Granada (Spain), 11/2017.
- **Visiting Professor** at the Department of Applied Mathematics, University of Granada (Spain), 10/2015.
- **Research periods**, during the Ph.D., at the "Institut National des Sciences Appliquès" (INSA) , Rennes (France), from 01/2007 to 12/2009.

******** **National and International collaborations** ********

Paul Sablonniére, Institut National des Sciences Appliquès (INSA) and Rennes 1 University (France); **Domingo Barrera** and **Marìa Josè Ibáñez**, University of Granada (Spain); **Driss Sbibih**, **Mohamed Tahrichi** and **Mohamed Lamnii**, Universitè Mohammed Ier, Oujda (Morocco); **Chafik Allouch**, University of Nador (Morocco); **Michael Bartoň, Ali Hashemian, Hanna Sliusarenko**, Basque Center for Applied Mathematics, Bilbao (Spain); **Francesc Aràndiga**, University of València (Spain); **Chong-Jun Li**, Dalian University of Technology (China); **Laurance Grammont**, University of Saint-Etienne (France); **Rekha Kulkarni**, Indian Institute of Technology Bombay (India); **Costanza Conti** and **Alessandra Sestini**, University of Florence (Italy); **Alessandra Aimi** and **Mattia Alex Leoni**, University of Parma (Italy); **Carolina Vittoria Beccari**, University of Bologna (Italy); **Catterina Dagnino**, **Ezio Venturino**, **Paola Lamberti**, **Isabella Cravero** and **Roberto Cavoretto**, University of Torino (Italy).

******** **Referee for international journals** ********

Constructive Approximation, BIT Numerical Mathematics, Computer Aided Geometric Design, Journal of Computational and Applied Mathematics, Mathematics and Computers in Simulation, Applicable Analysis, International Journal of Computer Mathematics, Mathematical Modelling and Analysis, Results in Mathematics, Mathematical Methods in the Applied Sciences, Computational and Mathematical Methods, Applied Mathematics and Computation, Graphical Models, Computational and Applied Mathematics, Applied Numerical Mathematics.

******** **Editor activity** ********

- Special Issue of Mathematics and Computers in Simulation: "MATCOM Special Issue MACMAS 2023: Second Edition of the International Conference on Mathematical and Computational Modelling, Approximation and Simulation: New trends, recent developments and applications in environment and natural resources". Edited by Marìa Josè Ibáñez, Paola Lamberti, Sara Remogna, Driss Sbibih, in progress.
- Volume of the SEMA-SIMAI Springer Series, related to the proceedings of the congress "International Symposium on New Trends in Approximation and Applications (NT2A'22)". Edited by Sara Remogna, Driss Sbibih, Abdelhafid Serghini, in progress.

- Special Issue of Applied Mathematics and Computation: "Shape Modelling, Approximation and Refinability Towards new computational techniques". Edited by Serena Morigi, Maria Lucia Sampoli, Sara Remogna, Enza Pellegrino, 2023.

• Special Issue "Spline Functions and Applications" of Mathematics. Edited by Domingo Barrera, María José Ibáñez, Sara Remogna, 2021.

• Volume of the SEMA-SIMAI Springer Series, related to the proceedings of the congress MACMAS 2019. Edited by Domingo Barrera, Sara Remogna, Driss Sbibih, 2021.

• Special Issue of Mathematics and Computers in Simulation: "MATCOM Special Issue MACMAS 2019: First International Conference on Mathematical and Computational Modelling, Approximation and Simulation: New trends, recent developments and applications in environment and natural resources". Volume 186, pages 1-166 (August 2021). Edited by Domingo Barrera, Sara Remogna, Driss Sbibih, 2021.

• Special Issue of Rendiconti del Seminario Matematico dell'Università e del Politecnico di Torino, Volume 76, issue 2, pages 1-206 (2018). Edited by Paola Lamberti, Sara Remogna, 2018.

******** Further research activities ********

• Member of the National Group for Scientific Computing (Gruppo Nazionale per il Calcolo Scientifico dell'Istituto Nazionale di Alta Matematica), Section Numerical Analysis, 2007 – present.

• Member of the Italian Society of Applied and Industrial Mathematics (SIMAI), 2012-2014, 2018 – present.

• Member of the Italian Mathematical Union (UMI), 2015 – present.

**** Contributed conference talks and invited talks ****

- *Bivariate Spline Quasi-interpolants on Criss-cross Triangulations for the Approximation of Piecewise Smooth Functions*, 21st IMACS World Congress (IMACS2023), Roma, Italy, 11-15/09/2023 (with F. Aràndiga, P. Lamberti)

- *Nonlinear Quartic Quasi-interpolant Splines to Approximate Piecewise Smooth Functions*, 21st IMACS World Congress (IMACS2023), Roma, Italy, 11-15/09/2023 (with F. Aràndiga, P. Lamberti)

- Invited talk: *Curve network interpolation by quadratic B-spline surfaces with multiple knots and free parameters*, SIMAI National Congress (SIMAI 2023), Matera, Italy, 29/08-1/09/2023 (with C. Dagnino, P. Lamberti)

- *Low-degree quasi-interpolation in the Bernstein basis*, 10th International Congress on Industrial and Applied Mathematics (ICIAM 2023), Tokyo, Japan, 20-25/08/2023 (with S. Eddargani, M.J. Ibáñez)

- Invited talk: *Low-degree univariate spline quasi-interpolants in Bernstein-Bézier form*, SIAM Conference on Computational Geometric Design (SIAM-GD) - Part of the International Geometry Summit 2023, Genova, Italy, 3-5/07/2023 (with D. Barrera, S. Eddargani, M.J. Ibáñez)

- *Numerical solution of log-singular Hammerstein integral equations by spline QI projectors*, 2nd International Conference on Mathematical and Computational Modelling, Approximation and Simulation (MACMAS 2023), Torino, Italy, 29/05-1/06/2023 (with A. Aimi, M.A. Leoni)

- *Spline Gauss Quadrature Rules for Solving Boundary Value Problems via Nyström Method*, 2nd International Conference on Mathematical and Computational Modelling, Approximation and Simulation (MACMAS 2023), Torino, Italy, 29/05-1/06/2023 (with A. Hashemian, H. Sliusarenko, D. Barrera, M. Bartoň)

- *Local construction of quasi-interpolating splines in the Bernstein basis*, 2nd International Conference on Mathematical and Computational Modelling, Approximation and Simulation (MACMAS 2023), Torino, Italy, 29/05-1/06/2023 (with D. Barrera, S. Eddargani, M.J. Ibáñez), poster

- *In Memoriam Paul Sablonniére*, 3rd International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in ITaly (SMART 2022), Rimini, Italy, 20-24/09/2022 (with F. Pelosi, A. Sestini), poster

- *Terrain Modelling Based on Triangular Quasi-Interpolating Splines*, 11th International Eurasian Conference on Mathematical Sciences and Applications (IECMSA - 2022), Istanbul, Turkey, 29/08-1/09/2022 (with D. Barrera, S. Eddargani, M.J. Ibáñez, R. Reinoso), poster

- Invited talk: *Approximation in Bernstein-Bézier form on type-1 triangulations*, INdAM Meeting "Approximation Theory and Numerical Analysis meet Algebra, Geometry, Topology", Cortona, Italy, 5-9/09/2022 (with D. Barrera, C. Dagnino, S. Eddargani, M.J. Ibáñez)

- *Triangular spline quasi-interpolants and their application in terrain modelling*, Functional Analysis, Approximation Theory and Numerical Analysis (FAATNA 2022), Matera, Italy, 5-8/07/2022 (with D. Barrera, S. Eddargani, M.J. Ibáñez, R. Reinoso), poster

- Plenary Speaker: *Numerical solution of nonlinear Fredholm integral equations by spline quasi-interpolating projectors*, International Symposium on New Trends in Approximation and Applications (NT2A'22), Oujda, Morocco, 27-28/06/2022 (with A. Aimi, M.A. Leoni)

- *Some recents results on quasi-interpolation in the Bernstein basis*, International Symposium on New Trends in Approximation and Applications (NT2A'22), Oujda, Morocco, 27-28/06/2022 (with D. Barrera, S. Eddargani, M.J. Ibáñez)

- *Explicit quasi-interpolation in Bernstein-Bézier form on the PS-split of a type-1 triangulation*, 21th International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2021), Rota, Spain, 22-27/07/2021 (with D. Barrera, S. Eddargani, M.J. Ibáñez)

- Invited talk: *Spline quasi-interpolation: application to the solution of integral equations*, Research day in Florence, Firenze, Italy, 28-29/11/2019 (with C. Dagnino)

- *Bivariate h-Bernstein basis: definition and properties*, Mathematical and Computational Modelling, Approximation and Simulation (MACMAS 2019), Granada, Spain, 9-11/09/2019 (with P. Lamberti, M. Lamnii, D. Sbibih)

- Invited talk: *Trivariate splines for volumetric data*, XXI U.M.I. National Congress, Pavia, Italy, 2-7/09/2019 (with D. Barrera, C. Dagnino, M.J. Ibáñez, P. Lamberti)

- *Do Gaussian quadrature formulas for splines produce better results than polynomial formulas when used in combination with the Nyström method to numerically solve Fredholm integral equations of the second kind?*, 19th International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2019), Rota, Spain, 30/06-06/07/2019 (with D. Barrera, M. Bartoň, I. Chiarella), poster

- Invited talk: *Optimal Spline Quasi-interpolation on Type-1 Triangulations*, Approximation Theory 16 (AT16), Nashville, TN, USA, 19-22/05/2019 (with D. Barrera, C. Conti, C. Dagnino, M.J. Ibáñez)

- Invited talk: *Trivariate blending spline quasi-interpolation*, 15th Meeting on Applied Scientific Computing and Tools (MASCOT2018), Roma, Italy, 2-5/10/2018 (with D. Barrera, C. Dagnino, M.J. Ibáñez)

- *Spline quasi-interpolating projection methods for Urysohn integral equations*, 18th International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2018), Costa Ballena, Rota, Spain, 9-14/07/2018 (with C. Dagnino)

- *Point and differential C^1 quasi-interpolation on type-1 meshes*, 18th International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2018), Costa Ballena, Rota, Spain, 9-14/07/2018 (with D. Barrera, C. Dagnino, M.J. Ibáñez)

- *On the solution of linear and nonlinear integral equations based on spline quasi-interpolating projectors*, SIMAI National Congress (SIMAI 2018), Roma, Italy, 2-6/07/2018. (with C. Dagnino)

- Invited talk: *Near-best quartic C^2 spline quasi-interpolation for volume data reconstruction*, SIAM Conference on IMAGING SCIENCE, Bologna, Italy, 5-8/06/2018 (with D. Barrera, C. Dagnino, M.J. Ibáñez, P. Lamberti)

- *Quasi-interpolation by C^1 quartic splines on a three-directional mesh*, Second International Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability in ITaly (SMART 2017), Gaeta, Italy, 17-21/09/2017 (with D. Barrera, C. Dagnino, M.J. Ibáñez)

- *Numerical solution of surface integral equations based on spline quasi-interpolation*, 17th International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2017), Costa Ballena, Rota, Spain, 04-08/07/2017 (with C. Dagnino)

- *Near-best quasi-interpolation and volume data reconstruction*, XX U.M.I. National Congress, Siena, Italy, 7-12/09/2015 (with C. Dagnino, P. Lamberti)

- *B-spline surfaces on criss-cross triangulations for curve network interpolation*, 15th International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2015), Costa Ballena, Rota, Spain, 06-10/07/2015 (with C. Dagnino, P. Lamberti)

- *On 1D, 2D and 3D spline quasi-interpolation*, Miniworkshop Advances in Numerical Analysis and Applications, Torino, Italy, 30-31/03/2015 (with C. Dagnino, P. Lamberti)

- *Local quartic C^2 spline quasi-interpolation on 3D bounded domains*, 2014 International Conference on Pure Mathematics-Applied Mathematics (PM-AM '14), Venezia, Italy, 15-17/03/2014 (with C. Dagnino, P. Lamberti)

- Invited talk: *Box Splines on Type-2 Triangulations and Applications*, 61st Workshop: Multivariate Approximation and Interpolation with Applications (MAIA2013), Erice, Italy, 25-30/09/2013 (with C. Dagnino)

- *Recent results on uni and multivariate spline quasi-interpolation*, International Conference on New Trends in Splines and Approximation Theory (SAT 2013), Rennes, France, 19-21/06/2013 (with C. Dagnino, P. Lamberti)

- *Numerical integration based on trivariate C^2 quartic spline quasi-interpolants*, 3rd Dolomites Workshop on Constructive Approximation and Applications (DWCAA12), Alba di Canazei, Italy, 9-14/09/2012 (with C. Dagnino, P. Lamberti)

- *Quadratic B-splines on criss-cross triangulations for solving elliptic diffusion-type problems*, 12th International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2012), La Manga, Spain, 2-5/07/2012 (with I. Cravero, C. Dagnino)

- *Reconstruction of volume data by trivariate quartic C^2 box splines*, 11th SIMAI National Congress (SIMAI 2012), Torino, Italy, 25-28/06/2012 (with C. Dagnino, P. Lamberti)

- *Local bases for quadratic deficient spline spaces on criss-cross triangulations*, International Conference on Scientific Computing (SC2011), S. Margherita di Pula, Italy, 10-14/10/2011 (with C. Dagnino, P. Lamberti)

- *Differentiation Based on Optimal Local Spline Quasi-Interpolants with Applications*, 8th International Conference of Numerical Analysis and Applied Mathematics (IC-NAAM 2010), Rhodes, Greece, 19-25/09/2010 (with C. Dagnino)

- *On trivariate blending sums of univariate and bivariate quadratic spline quasi-interpolants on bounded domains*, 7th International Conference on Curves and Surfaces, Avignon, France, 24-30/06/2010 (with P. Sablonniére)

- Invited talk: *Bivariate C^2 cubic spline quasi-interpolants on uniform Powell-Sabin triangulations of a rectangular domain*, INdAM Meeting "New Frontiers in CAGD", Bertinoro, Italy, 17-21/05/2010

- *Quasi-interpolant operators based on trivariate C^2 quartic box splines*, 6th International Conference on Functional Analysis and Approximation Theory (FAAT 2009), Acquafredda di Maratea, Italy, 24-30/09/2009

- *On Unequally Smooth Bivariate Quadratic Spline Spaces*, 9th International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2009), Gijón, Spain, 30/06-3/07/2009 (with C. Dagnino, P. Lamberti)

- *A model for a mildly-severely staged disease*, MATHMOD - 6th Vienna International Conference on Mathematical Modelling, Vienna, Austria, 11-13/02/2009 (with R. Cavoretto, E. Venturino)

- *Constructing good coefficient functionals for bivariate C^1 quadratic spline quasi-interpolants*, 7th International Conference on Mathematical Methods for Curves and Surfaces (MMCS 2008), Tonsberg, Norway, 26/06-1/07/2008

- *Quasi-interpolation based on bivariate quadratic B-splines with multiple knots*, 6th International Congress on Industrial and Applied Mathematics (ICIAM 2007), Zurich, Switzerland, 16-20/07/2007 (with C. Dagnino, P. Lamberti)

Books and Articles	********** Scientific Publications **********

[P44] D. Barrera, S. Eddargani, M.J. Ibáñez, S. Remogna, *Low-degree spline quasi-interpolants in the Bernstein basis*, Applied Mathematics and Computation, 457 (2023) 128150.

[P43] F. Aràndiga, S. Remogna, *Nonlinear 2D C^1 Quadratic Spline Quasi-Interpolants on Triangulations for the Approximation of Piecewise Smooth Functions*, Axioms, 12 (2023) 1002.

[P42] S. Remogna, D. Sbibih, M. Tahrichi, *Superconvergent Nyström Method Based on Spline Quasi-Interpolants for Nonlinear Urysohn Integral Equations*, Mathematics, 11 (2023) 3236.

[P41] A. Hashemian, H. Sliusarenko, S. Remogna, D. Barrera, M. Bartoň, *Solving boundary value problems via the Nyström method using spline Gauss rules*, Computers and Mathematics with Applications, 143 (2023) 33–47.

[P40] D. Barrera, S. Eddargani, M.J. Ibáñez, S. Remogna, *Spline quasi-interpolation in the Bernstein basis on the Powell-Sabin 6-split of a type-1 triangulation*, Journal of Computational and Applied Mathematics, 424 (2023) 115011.

[P39] C. Dagnino, P. Lamberti, S. Remogna, *On spline quasi-interpolation through dimensions*, Annali dell'Universita di Ferrara, 68 (2022) 397–415.

[P38] D. Barrera, M. Bartoň, I. Chiarella, S. Remogna, *On numerical solution of Fredholm and Hammerstein integral equations via Nyström method and Gaussian quadrature rules for splines*, Applied Numerical Mathematics, 174 (2022) 71–88.

[P37] P. Lamberti, S. Remogna, *Quadratic B-Spline Surfaces with Free Parameters for the Interpolation of Curve Networks*, Mathematics, 10 (2022) 1–17.

[P36] M. Marchisio, S. Remogna, F. Roman, M. Sacchet, *Teaching Mathematics to Non-Mathematics Majors through Problem Solving and New Technologies*, Education Sciences, 12 (2022) 1–18.

[P35] C. Allouch, S. Remogna, D. Sbibih, M. Tahrichi, *Superconvergent methods based on quasi-interpolating operators for fredholm integral equations of the second kind*, Applied Mathematics and Computation, 404 (2021) 1–14.

[P34] D. Barrera, C. Conti, C. Dagnino, M.J. Ibáñez, S. Remogna, *C^1-Quartic Butterfly-Spline Interpolation on Type-1 Triangulations*, In: Fasshauer G.E., Neamtu M., Schumaker L.L. (eds) Approximation Theory XVI. AT 2019. Springer Proceedings in Mathematics & Statistics, vol 336. Springer (2021) 11–26.

[P33] M. Marchisio, S. Remogna, F. Roman, M. Sacchet, *Teaching Mathematics in Scientific Bachelor Degrees Using a Blended Approach*, Proceedings - 2020 IEEE 44th Annual Computers, Software, and Applications Conference, COMPSAC 2020 (2020) 190–195.

[P32] P. Lamberti, M. Lamnii, S. Remogna, D. Sbibih, *h-Bernstein basis functions over a triangular domain*, Computer Aided Geometric Design, 79 (2020) 25–35.

[P31] D. Barrera, C. Dagnino, M.J. Ibáñez, S. Remogna, *A trivariate near-best blending quadratic quasi-interpolant*, Mathematics and Computers in Simulation, 176 (2020) 25–35.

[P30] D. Barrera, C. Dagnino, M.J. Ibáñez, S. Remogna, *Point and differential C^1 quasi-interpolation on three direction meshes*, Journal of Computational and Applied Mathematics, 354 (2019) 373–389.

[P29] C. Dagnino, A. Dallefrate, S. Remogna, *Spline quasi-interpolating projectors for the solution of nonlinear integral equations*, Journal of Computational and Applied Mathematics, 354 (2019) 360–372.

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[P17] C. Dagnino, P. Lamberti, S. Remogna, *Local quartic* C^2 *spline quasi-interpolation on 3D bounded domains*, in Proceedings of the 2014 International Conference on Pure Mathematics - Applied Mathematics (P. M. Pardalos, R. Agarwal, L. Kocinac, R. Neck, N Mastorakis, K. Ntalianis eds.), 1 (2014) 131–135.

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[P11] S. Remogna, *Bivariate* C^2 *cubic spline quasi-interpolants on uniform Powell-Sabin triangulations of a rectangular domain*, Advances in Computational Mathematics, 36 (2012) 39–65.

[P10] S. Remogna, *Quasi-interpolation operators based on the trivariate seven-direction* C^2 *quartic box spline*, BIT Numerical Mathematics, 51 (2011) 757–776.

[P9] S. Remogna, P. Sablonniére, *On trivariate blending sums of univariate and bivariate quadratic spline quasi-interpolants on bounded domains*, Computer Aided Geometric Design, 28 (2011) 89–101.

[P8] S. Remogna, *Quasi-interpolanti spline locali su domini limitati di* $\mathbb{R}^2$ *e* $\mathbb{R}^3$, La Matematica nella Società e nella Cultura, Rivista dell'Unione Matematica Italiana, Serie I, Vol. IV (2011) 75–78.

[P7] C. Dagnino, S. Remogna, *Differentiation Based on Optimal Local Spline Quasi-Interpolants with Applications*, Numerical Analysis and Applied Mathematics, edited by T. E. Simos, G. Psihoyios and Ch. Tsitouras, American Institute of Physics, (2010) 2025–2028.

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[P5] S. Remogna, *Pseudo-spectral derivative of quadratic quasi-interpolant splines*, Rendiconti del Seminario Matematico dell'Università e del Politecnico di Torino, Vol. 67, 3 (2009), 351–362.

[P4] R. Cavoretto, S. Remogna, E. Venturino, *A model for mildly-severely staged disease*, in Editor: I. Troch, F. Breitenecker, Proceedings Mathmod 09 Vienna - Full Papers CD Volume, Vienna Univ of Technology: Argesim, vol. 35 (2009), 1786-1798.

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[P1] C. Dagnino, S. Remogna, *Local Univariate Spline Quasi^2-Interpolants with Boundary Conditions*, Journal of Information and Computational Science, 4 (2007), 497–504.

******** **Dissertations** ********

[T2] S. Remogna, *Local spline quasi-interpolants on bounded domains of $\mathbb{R}^2$ and $\mathbb{R}^3$*, Ph.D. Thesis, University of Torino and Rennes 1 University, 2010.
Supervisors: Prof. P. Sablonnière (Institut National des Sciences Appliquées (INSA) of Rennes and Rennes 1 University) and Prof. C. Dagnino (University of Torino).

[T1] S. Remogna, *Basi di spazi spline 2D con vincoli*, Master Thesis, University of Torino, 2006.

Teaching activities

- **Ph.D. courses**
- Numerical solution of uni and multivariate integral equations of the second kind, 2012/13.
- **Master's courses**
- Numerical Methods for CAGD, 2010/11, 2011/12, 2012/13, 2013/14
- Numerical Methods for Applications, 2015/16, 2017/18, 2018/19
- Approximation Methods, 2018/19, 2019/20, 2021/22, 2022/23, 2023/24
- Laboratory of Scientific Computing, 2013/14
- **Degree courses**
- Numerical Analysis, 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/12, 2012/13, 2013/14, 2018/19, 2019/20, 2021/22, 2022/23, 2023/24
- Numerical Methods for Computer Graphics, 2011/12, 2013/14, 2014/15, 2016/17, 2017/18
- Laboratory of Numerical Analysis, 2017/18
- Biomathematics, 2007/08
- Calculus, 2009/10, 2010/11, 2014/15, 2015/16, 2016/17, 2019/20, 2021/22, 2022/23, 2023/24
- Mini-course *On the error of quadrature formulas* for the project "Percorso di Eccellenza" (Undergraduate degree in Mathematics), 2017/18, 2018/19, 2021/22, 2022/23, 2023/24
- **Supervisor of**
- 13 Master Theses in Mathematics.
- 7 Master Theses in Mathematics, carried out at the following companies and research centers: i-Deal S.R.L. (Biella), CNR - IMATI (Genova), SPEA S.p.A. (Volpiano - Torino).
- 16 Bachelor Theses in Mathematics.
- 2 Bachelor Theses in Mathematics for Finance and Insurance.
- **Co-supervisor of**
- 7 Master Theses in Mathematics.

- 15 Bachelor Theses in Mathematics.

Professional activities

- Member of several committees of the Department of Mathematics and of Bachelor Degree and Master Degree in Mathematics, University of Torino, 2007 – present.

- Member of the Committee for n.1 fixed-term Assistant Professor Positions (RTD-A) in Numerical Analysis at University of Firenze, 2022.

- External Referee of the PhD Thesis of Chiara Romanengo, University of Genova, 2023.

- Member of the PhD Thesis Committee of Chiara Romanengo, PhD in Mathematics and Applications (35th cycle), University of Genova, 2023.

- Member of the Committee for n.5 Research Fellow positions, University of Torino, 2022.

- Member of the Committee for the PhD Admissions, PhD in Pure and Applied Mathematics (36th cycle), University of Torino and Politecnico of Torino, 2020.

Activity for Promoting Mathematics

- Participant of the Public Engagement Project "MateGrafica", University of Torino, 2021/22, 2022/23, 2023/24.

- Discussant during the presentation of the book "Sette semplici lezioni di matematica, d'amore, morte, calcio, meringhe e geometria" by Francesco Malaspina (Torino: Lindau, 2020), Liberi Libri, Politecnico of Torino, Italy, 23/11/2021.

- Presentation of the poster *Ricostruzione di dati 3D e 4D* during "DNA.italia. Incontrare la filiera della cultura", Torino, Italy, 18-19/04/2012.

- Video at *Centro per la didattica delle scienze "Xké?, il laboratorio delle curiosità"*, Torino, Italy, 09/2011.

- Activity *Nuvole di punti* during the "Notte dei Ricercatori 2008", Torino, Italy, 26/09/2008.

Additional information

- **Periods of maternity leave** from 01/05/2014 to 02/02/2015, from 20/05/2016 24/02/2017 and from 05/09/2020 to 15/06/2021.
- **Scholarships**
- Doctoral studies scholarship of the University of Torino, 2006.
- Grant art.36 of the University of Torino for teaching assistant of Numerical Analysis, 2006.

Torino, 19/12/2023
Signature

Sara Remogna