Michele Di Cristo

2005: **Ph.D. in Mathematics**, University of Milano, Italy.
1998: **Laurea in Mathematics** University of Trieste, Italy.

Employments

2015–present: associated professor at Politecnico di Milano
2012–2014: visiting professor at KAUST Saudi Arabia
2011–2012: associated member of IAC-CNR (Italian National Research Council).
2007–2015: assistant professor at Politecnico of Milano.
2005–2007: postdoctoral researcher at Politecnico of Milano.
2000–2004 Phd student at University of Milano
1999–2000: researcher at University of Milano.

Scientific Interests

The research activity mainly deals with the study of inverse problems related to partial differential equations. In particular from a knowledge of the Cauchy data on the boundary of a given domain, it has been studied the problem of parameter and domain identification for elliptic and parabolic equations, elastic systems, Navier–Stokes equation and scattering problems.

Publications

Referred Journals

G. Alberti, G. Bal, M. Di Cristo, **Critical point for elliptic equations with prescribed boundary conditions**, Arch. Ration. Mech. Anal., at press.

M. Di Cristo, E. Francini, C.-L. Lin, S. Vessella, J.-N. Wang, **Carleman estimate for second order elliptic equations with Lipschitz leading coefficients and jumps at an interface**, J. Math. Pures Appl., at press.

M. Di Cristo, E. Sincich, S. Vessella, **Size Estimates of Unknown Boundaries with Robin Type Condition**. Proc. Roy. Soc. Edinburgh Sect. A, at press.

G. Alessandrini, M. Di Cristo, E. Francini, S. Vessella, **Stability for Quantitative Photoacoustic Tomography with well chosen illuminations**, Annali di Matematica Pura e Applicata, 192 (2017), pp. 395–406.

M. Di Cristo, **Stability analysis of the inverse inclusion problem**, Rend. Istit. Mat. Univ. Trieste, 48 (2016), pp. 433–462.

G. Alessandrini, M. Di Cristo, A. Morassi, E. Rosset, **Stable Determination of an Inclusion in an Elastic Body by Boundary Measurements**, SIAM J. Math. Anal. 46 (2014), pp. 2692—2729.

V. Bacchelli, M. Di Cristo, E. Sincich, S. Vessella, **A parabolic inverse problem with mixed boundary data. Stability estimates for the unknown boundary and impedance**, Trans. Amer. Math. Soc. 336 (2014), pp. 3965–3995.

M. Di Cristo, C-L. Lin, A. Morassi, E. Rosset S. Vessella, J-N. Wang, **Doubling inequalities for anisotropic plate equations and size estimates of inclusions**, Inverse Problems 29 (2013), 17pp.

M. Di Cristo, C-L. Lin, S. Vessella, J-N. Wang, **Size estimates of the inverse inclusion problem for the shallow shell equation**, SIAM J. Math. Anal. 45 (2013), pp. 88-100.

M. Di Cristo, C-L. Lin, J-N. Wang, **Quantitative uniqueness estimates for the shallow shell system and their application to an inverse problem**, Ann. Scuola Norm. Sup. Pisa Cl. Sci. 12 (2013), pp. 88-100.

F. Cakoni, M. Di Cristo, J. Sun, **A multistep gap functional method for the inverse problem in multilayered medium**, Complex Var. Elliptic Equ. 57 (2012), pp. 261–276.

M. Di Cristo, S. Vessella, **Stability Analysis of an Inverse Parabolic Problem with Discontinuous Variable Coefficient**, Proc. Roy. Soc. Edinburgh Sect. A 141 (2011), pp. 975–999.

M. Di Cristo, S. Vessella, **Stable Determination of the Discontinuous Conductivity Coefficient of a Parabolic Equation**, SIAM J. Math. Anal. 42 (2010), pp. 183–217.

J. Fan, M. Di Cristo, Y. Jiang, G. Nakamura, **Inverse viscosity problem for the Navier-Stokes equation**, J. Math Anal. Appl. 365 (2010), pp. 750–757.

M. Di Cristo, D. Guidetti, A. Lorenzi, **Abstract parabolic equations with applications to problems in cylindrical space domains**, Adv. Diff. Eq. 15 (2010), pp. 1–42.

M. Di Cristo, **Stability estimates in the inverse transmission scattering problem**, Inverse Probl. Imaging 3 (2009), pp. 551–565.

Y. Lei, M. Di Cristo, G. Nakamura, **Size Estimates in Thermal Imaging**, Appl. Anal. 88 (2009), pp. 831–846.

M. Di Cristo, J. Sun, **The Determination of the Support and Surface Conductivity of a Partially Coated Buried Object**, Inverse Problems 23 (2007), pp. 1161–1179.

M. Di Cristo, L. Rondi, **Examples of exponential instability for inverse elliptic problems with unknown boundaries**, J. Phys.: Conf. Ser. 73 (2007), pp. 1–18.

M. Di Cristo, **Stable determination of an inhomogeneous inclusion by local boundary measurements**, J. Comput. Appl. Math. 198 (2007), pp. 414–425.

M. Di Cristo, J. Sun, **An inverse scattering problem for a partially coated buried object**, Inverse Problems 22 (2006), pp. 2331–2350.

M. Di Cristo, L. Rondi, S. Vessella, **Stability properties for a parabolic inverse problems with unknown boundaries**, Annali di Matematica Pura e Applicata 185 (2006), pp. 223–255.

G. Alessandrini, M Di Cristo, **Stable determination of an inclusion by boundary measurements**, SIAM J. Math. Anal. 37 (2005), pp. 200–217.

M. Di Cristo, L. Rondi, **Examples of exponential instability for inverse inclusion and scattering problem**, Inverse Problems 19 (2003), pp. 685–701.

G. Alessandrini, M Di Cristo, **Unique determination of surface breaking cracks in three dimensional bodies**, J. Inverse Ill-Posed Probl. 8 (2000), pp. 469–482.

Academic Visits

Tata Institute of Fundamental Research, Bangalore, India 2016.
Institut Henri Poincaré, Paris, France 2015 (2 months for thematic quarter on inverse problems)
King Abdullah University of Science and Technology, Saudi Arabia, 2012 (4 months), 2013 (4 months), 2014 (6 months).
National Taiwan University, Taipei, Taiwan, 2008, 2012, 2013.
Fudan University, Shanghai China, 2010, 2012 (2 months).
Tongji University, Shanghai, China, 2010 (2 months), 2012 (2 months).
National Cheng Kung University, Tainan Taiwan, 2012.
Southeast University, Nanjing, China, 2010.
Wichita State University, Kansas, USA, 2009 (1 month).
Delaware State University, Delaware, USA, 2008 (1 month), 2009.
Hokkaido University, Japan, 2007 (2 months), 2009 (8 months).
Tokyo University, Japan, 2009.
Göttingen University, Germany, 2005.
University of Delaware, Delaware, USA, 2003 (1 month), 2006 (6 months), 2008, 2009.

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