

CURRICULUM di Valeria CHIADO' PIAT

Personal data

Full professor at DISMA -Department of Mathematical Sciences "G. L. Lagrange", Politecnico di Torino (Italy).

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Present Academic Role: Vice-Head of Department

Research Area.

I am mainly interested into asymptotic problems for variational and differential models arising in material sciences and physics, including the study of homogenization and vibration of heterogeneous media.

PhD students

Andrea Cancedda, 2012-14 (thesis 2015)

Marco Zoboli, 2016-2018 (thesis 2018)

Lorenza D'Elia, dal 2018 (thesis 2020)

Principal Investigator of the projects

- 2001-5 GNAMPA-INDAM Project "Homogenization techniques and asymptotic methods for multi-scale problems" "

- Differential equations and Calculus of Variations (1998-2000), Coordinator of the DIMAT Unit for the project TREES - THE 5 STARS OF SUSTAINABLE PRIVATE MOBILITY (2007-2010)

- 2017 GNAMPA-INDAM Project "Spectral problems in perturbed domains: mathematical models for mobile communications of the 5th generation"

- 2020 GNAMPA project "Variational problems in domains with a complex geometric structure"

Scientific event recently co-organized

"Recent trends in the analysis of spectral problems and applications" (Politecnico di Torino, 15-16 September 2016). "Meeting on analysis and modeling of multi-scale problems" (Politecnico di Torino, 1 June 2017). "Short meeting on asymptotic methods for PDE's" (Politecnico di Torino, 24 January 2018). "Workshop on PDEs,- Classical Problems, New Approaches, Applications" (Politecnico di Torino, 26 September 2019). " CALCULUS OF VARIATIONS AND APPLICATIONS " An International Conference to celebrate Gianni Dal Maso's 65th Birthday (SISSA, Trieste, 27 January - 1 February 2020). 2021 Meeting for the Gnampa project "Variational problems in domains with a complex geometric structure" (Politecnico di Torino, 18 December 2021).

Recent talks and seminars

2014: 5 December , invited talk at the day "Developments and perspectives of the Calculus of Variations", Sissa, Trieste (Italy).

2018: plenary talk at The international conference on differential equations and dynamical systems Suzdal (Russia) 6-11 July 2018.

2019: "International Conference on Elliptic and Parabolic Problems" (Gaeta, Italy, 20-24 maggio). "9th International workshop on the multiscale modelling and methods" (Université de Saint-Etienne, France, 4 giugno 2019). 9th International Congress on Industrial and Applied Mathematics, (Valencia, Spain, 15-19 luglio).

2021: The Lisbon Webinar in Analysis in Differential Equations (8 April, online). Webinar at Bath University

<https://people.bath.ac.uk/kc525/Seminar/programme.html>

Publications of the last 5 years

A.Cancedda, V. Chiadò Piat, S. Nazarov, J. Taskinen (2020), "Spectral gaps for the linear water-wave problem in a channel with thin structures, Mathematische Nachrichten (in print 2022)

V. Chiadò Piat, S. Nazarov, L. D'Elia (2021) The stiff Neumann problem: Asymptotic specialty and "kissing" domains, *Asymptotic Analysis*, 156 (2021) 1-36, <https://content.iospress.com/articles/asymptotic-analysis/asy211701>, arXiv:2001.11332

A. Braides, V. Chiadò Piat, L. D'Elia (2020), An extension theorem from connected sets and homogenization of non-local functionals, *Nonlinear Analysis* 208 (2021) 112316 [arXiv:2007.04635](https://arxiv.org/abs/2007.04635)

V. Chiadò Piat, S. Nazarov, (2020) Steklov spectral problems in a set with a thin toroidal hole, *Partial Differential Equations in Applied Mathematics*, <https://doi.org/10.1016/j.padiff.2020.100007>

S. Pastukhova, V. Chiadò Piat, (2020) Homogenization of multivalued monotone operators with variable growth exponent, In: *NETWORKS AND HETEROGENEOUS MEDIA*, pagine 281-30, ISSN: 1556-1801

V. Chiadò Piat, M. Zoboli, (2019) Homogenization of some quasi-linear elliptic equations with gradient constraints, In: *BOLLETTINO DELLA UNIONE MATEMATICA ITALIANA*, pagine 1-20, ISSN: 1972-6724

V. Chiadò Piat, A. Braides, (2019) Homogenization of networks in domains with oscillating boundaries, In: *APPLICABLE ANALYSIS*, pagine 45-63, ISSN: 0003-6811 2018

V. Chiadò Piat, S. Nazarov, K.M. Ruotsalainen, (2018) Partial Differential Equations - Spectral gaps and non-Bragg resonances in a water channel, In: *ATTI DELLA ACCADEMIA NAZIONALE DEI LINCEI. RENDICONTI LINCEI. MATEMATICA E APPLICAZIONI*, pagine 321-342, ISSN: 1120-6330

V. Chiadò Piat, S. Nazarov, J.J. Taskinen, (2018) Embedded eigenvalues for water-waves in a three-dimensional channel with a thin screen, In: *QUARTERLY JOURNAL OF MECHANICS AND APPLIED MATHEMATICS*, pagine 187-220, ISSN: 0033-5614 2017

Torino, 22-02-2022