

Elena-Alexandra Melnig

Str. Decebal nr. 14, bl. B3, sc. B, ap. 17 – Iași – România

✉ alex.melnig@yahoo.com

Education

- Faculty of Mathematics, "Al. I. Cuza" University of Iași** 2015 – present
PhD studies in Mathematics
PhD advisor Prof. Dr. Cătălin-George Lefter
- Faculty of Mathematics, "Al. I. Cuza" University of Iași** 2013 – 2015
Master in Mathematics,
Master Thesis "*Fourier Analysis and linear PDE's*", under the supervision of Prof. Dr. Cătălin-George Lefter
- Faculty of Mathematics, "Al. I. Cuza" University of Iași** 2010 – 2013
Bachelor in Mathematics,
Bachelor Thesis "*Schrödinger equations*", under the supervision of Prof. Dr. Cătălin-George Lefter
- "Dimitrie Cantemir" High school, Iași** 2006 – 2010
Mathematics and Computer Sciences class

Professional experience

Research Asistent at "Octav Mayer" Institute of Mathematics, Romanian Academy, Iași Branch
Seminaries of

- Calculus I, Calculus II, Complex Analysis
- Ordinary Differential Equations
- Partial Differential Equations

Scientific training

- 2018, July 2 - 10: **Regional Romanian-French Summer School in Applied Mathematics**, Sinaia, România
- 2017, May 22 - June 2: Advanced School and Workshop on **Nonlocal Partial Differential Equations and Applications to Geometry, Physics and Probability**, International Center for Theoretical Physics, Trieste, Italy
- 2016, July 18 - 29: Summer school **Existence and regularity for the Plateau problem**, Cortona, Italy
- 2016, June 29 - July 7: **Regional Romanian-French Summer school in Applied Mathematics**, Sinaia, România
- 2015, December 14-18: Winter school **Nonlinear Function Spaces in Mathematics and Physical Sciences**, Lyon, France
- 2014, April 25 - July 24: **LLP-Erasmus Training Programme** held at École Normale Supérieure de Cachan, under the supervision of Prof. Laurent Desvillettes. The subject of the training programme was *The mathematical analysis of the kinetic-fluid coupling of a Vlasov equation with a Navier-Stokes equation*
- 2014, May, 27: Workshop **Parabolic equations and their applications to life sciences**, Centre de mathématiques et leur applications, ENS-Cachan, France
- 2013, July 29 - August, 30: **Scuola Matematica Interuniversitaria, Perugia, 2013**, Italy
- 2013, July 8 - 12: **Modern Nonlinear PDE Methods in Fluid Dynamics summer school**, held at University of Reading, England
- 2012 - 2013: various research seminars, organized at the Faculty of Mathematics by Prof. C. Lefter and Prof. M. Durea, main subjects: **Operator theory, Fourier analysis**

Talks in Conferences

- 2019, October 31 - November 3, **International Conference on Applied and Pure Mathematics, 6-th Edition**, title of the talk "Carleman inequalities and source estimates in reaction-diffusion systems", "Gheorghe Asachi" Technical University of Iași, România
- 2019, October 25, **Zilele Universității**, title of the talk "Stabilizarea sistemelor parabolice cu număr redus de controale", Faculty of Mathematics, "Al. I. Cuza" University of Iași
- 2019, October 19, **Zilele Academiei**, title of the talk "Stability in inverse source problems for nonlinear reaction-diffusion systems", "Octav Mayer" Institute of Mathematics, Romanian Academy, Iași Branch
- 2019, June 28-July 3, **The Ninth Congress of Romanian Mathematicians**, title of the talk "Stability in inverse source problems and nonlinear reaction-diffusion systems", "Dunărea de Jos" University, Galați, România
- 2019, July 4-6, **Sesiunea de Comunicări Studențești de Matematică**, title of the talk "Carleman estimates and stability in inverse source parabolic problems", Faculty of Mathematics, "Al. I. Cuza" University of Iași, România
- 2019, June 3-4, **Workshop for Young Researchers in Mathematics**, title of the talk "Stability in L^q -norm for inverse source parabolic problems", "Simion Stoilow" Institute of Mathematics, Romanian Academy, București, România
- 2018, October 26, **Zilele Universității**, title of the talk " L^q Carleman estimates and applications", Faculty of Mathematics, "Al. I. Cuza" University of Iași
- 2018, October 12-13, **Workshop Geometry and PDE's**, title of the talk "Lipschitz stability in L^q -norm for inverse source problems associated to parabolic systems", West University of Timisoara, România
- 2017, November 2-5, **International Conference on Applied and Pure Mathematics, 5-th Edition** title of the talk "Reaction-diffusion systems: controllability, stabilization, inverse problems", "Gheorghe Asachi" Technical University of Iași, România
- 2017, October 26-29, **Workshop Current Trends in Applied Mathematics** title of the "Feedback stabilization with one simultaneous control for systems of parabolic equations", "Octav Mayer" Institute of Mathematics, Romanian Academy, Iași Branch, România
- 2017, June 13-14, **Workshop Geometry and PDE's**, title of the talk "Reaction-diffusion systems. Control and stabilization", Faculty of Mathematics, West University of Timișoara, România

Publications

- Cătălin-George Lefter, Elena-Alexandra Melnig, *Feedback stabilization with one simultaneous control for systems of parabolic equations*, Mathematical Control and Related Fields, September 2018, 8(3,4): 777-787. doi: 10.3934/mcrf.2018034;
- Cătălin-George Lefter, Elena-Alexandra Melnig, *On the parabolic regularity, Sobolev embeddings and global Carleman estimates in $L^q(L^p)$ spaces*, Pure and Applied Functional Analysis, to appear;
- Elena-Alexandra Melnig, *Stability in L^q -norm for inverse source parabolic problems*, Journal of Inverse and Ill-Posed Problems, to appear;
- Elena-Alexandra Melnig, *Stability in inverse source problems for nonlinear reaction-diffusion systems*, submitted for publication in Nonlinear Differential Equations and Applications;
- Elena-Alexandra Melnig, *Internal feedback stabilization for parabolic systems coupled in zero or first order terms*, Evolution Equations and Control Theory, to appear.
- Cătălin-George Lefter, Elena-Alexandra Melnig, *Internal controllability of parabolic systems with star and tree like couplings*, submitted to Applied Mathematics and Optimization.

Foreign languages

English: Fluency in both written and spoken language.

French: Intermediate level in written and spoken language.

Other skills

Programming and scientific languages: C++, Matlab, LaTeX.

