

## Workshop “Regularity for non-linear pdes *Partially supported by ERC grant*”

### First Week

All lessons to be held in Aula Dini, Palazzo del Castelletto

Date	Time	Speaker
<b>01/09</b> <b>Tuesday</b>	09:30 - 10:30	<b>Nicola Fusco</b>
	11:00 - 12:00	<b>Nicola Fusco</b>
	15:00 - 16:00	<b>Tero Kilpeläinen</b>
	16:30 - 17:30	<b>Tero Kilpeläinen</b>
<b>02/09</b> <b>Wednesday</b>	09:30 - 10:30	<b>Tero Kilpeläinen</b>
	11:00 - 12:00	<b>Tero Kilpeläinen</b>
	15:00 - 16:00	<b>Nicola Fusco</b>
	16:30 - 17:30	<b>Nicola Fusco</b>
<b>03/09</b> <b>Thursday</b>	09:30 - 10:30	<b>Alessio Figalli</b>
	11:00 - 12:00	<b>Jan Kristensen</b>
	15:00 - 16:00	<b>Reiner Schaetzle</b>
<b>04/09</b> <b>Friday</b>	09:30 - 10:30	<b>Nicola Fusco</b>
	11:00 - 12:00	<b>Nicola Fusco</b>
	15:00 - 16:00	<b>Tero Kilpeläinen</b>
	16:30 - 17:30	<b>Tero Kilpeläinen</b>

### List of Courses

**Nicola Fusco** “A variational model for thin films deposition: regularity and qualitative properties of equilibrium configurations”

**Tero Kilpeläinen** “p-Laplacian type equations involving measures”

**Alessio Figalli** “Regularity results for Monge-Ampère type equations”

**Jan Kristensen** “A nonlinear version of Ornstein’s non-inequality”

**Reiner Schaetzle** “Minimizers of the Willmore functional under fixed conformal class”

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### Second Week

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Date	Time	Speaker
<b>07/09</b> <b>Monday</b>	09:30 - 10:30	<b>László Székelyhidi</b>
	11:00 - 12:00	<b>László Székelyhidi</b>
	15:00 - 16:00	<b>Gregory Seregin</b>
	16:30 - 17:30	<b>Joan Verdera</b>
<b>08/09</b> <b>Tuesday</b>	09:30 - 10:30	<b>László Székelyhidi</b>
	11:00 - 12:00	<b>László Székelyhidi</b>
	15:00 - 16:00	<b>Carlo Sbordone</b>
	16:30 - 17:30	<b>Paolo Marcellini</b>
<b>09/09</b> <b>Wednesday</b>	09:30 - 10:30	<b>László Székelyhidi</b>
	11:00 - 12:00	<b>László Székelyhidi</b>
	15:00 - 16:00	<b>Andrea Malchiodi</b>
	16:30 - 17:30	<b>Enrico Valdinoci</b>
<b>10/09</b> <b>Thursday</b>	09:30 - 10:30	<b>Tristan Riviere</b>
	11:00 - 12:00	<b>Tristan Riviere</b>
	15:00 - 16:00	<b>Francesca Da Lio</b>
<b>11/09</b> <b>Friday</b>	09:30 - 10:30	<b>Tristan Riviere</b>
	11:00 - 12:00	<b>Tristan Riviere</b>

### List of Courses

**László Székelyhidi** “Irregularity and non-uniqueness: a differential inclusions approach”

**Gregory Seregin** “On necessary conditions of blow-ups for Navier-Stokes equations”

**Joan Verdera** “Singular integrals in action : Painlevé’s problem and vortex patches”

**Carlo Sbordone** “Sobolev homeomorphisms”

**Paolo Marcellini** “Some explicit solutions to a system of implicit differential equations”

**Andrea Malchiodi** “Minimal surfaces in the Heisenberg group”

**Enrico Valdinoci** “Geometric features of some semilinear elliptic PDEs”

**Tristan Riviere** “The role of conservation laws and integrability by compensation in the analysis of conformally invariant variational problems”

**Francesca Da Lio** “Analysis of Half-Harmonic Maps into Manifolds”

## Workshop “Regularity for non-linear pdes *Partially supported by ERC grant*” Third Week

All lessons to be held in Aula Dini, Palazzo del Castelletto

Date	Time	Speaker
<b>14/09</b> <b>Monday</b>	09:30 - 10:30	<b>Tristan Riviere</b>
	11:00 - 12:00	<b>Tristan Riviere</b>
	15:00 - 16:00	<b>Wolfgang Arendt</b>
<b>15/09</b> <b>Tuesday</b>	09:00 - 10:00	<b>Juan Luis Vazquez</b>
	10:30 - 11:30	<b>Juan Luis Vazquez</b>
	12:00 - 13:00	<b>Emilio Acerbi</b>
	15:00 - 16:00	<b>Herbert Koch</b>
	16:30 - 17:30	<b>Herbert Koch</b>
<b>16/09</b> <b>Wednesday</b>	09:30 - 10:30	<b>Herbert Koch</b>
	11:00 - 12:00	<b>Herbert Koch</b>
	15:00 - 16:00	<b>Juan Luis Vazquez</b>
	16:30 - 17:30	<b>Juan Luis Vazquez</b>
<b>17/09</b> <b>Thursday</b>	09:30 - 10:30	<b>Herbert Koch</b>
	11:00 - 12:00	<b>Herbert Koch</b>
	15:00 - 16:00	<b>Sandro Salsa</b>
	16:30 - 17:30	<b>José Miguel Urbano</b>
<b>18/09</b> <b>Friday</b>	09:30 - 10:30	<b>Juan Luis Vazquez</b>
	11:00 - 12:00	<b>Juan Luis Vazquez</b>
	15:00 - 16:00	<b>Peter Lindqvist</b>
	16:30 - 17:30	<b>Patrizia Pucci</b>

### List of Courses

**Tristan Riviere** “The role of conservation laws and integrability by compensation in the analysis of conformally invariant variational problems”

**Wolfgang Arendt** “TbA”

**Juan Luis Vazquez** “Nonlinear diffusion. Existence, regularity and asymptotics”

**Emilio Acerbi** “TbA”

**Herbert Koch** “The initial value problem for parabolic equations with rough data”

**Sandro Salsa** “Obstacle problem for fractional Laplace operators”

**José Miguel Urbano** “ $p(x)$ -Harmonic functions with unbounded exponent in a subdomain”

**Peter Lindqvist** “Sharp Decay for the Solutions of a Diffusion Equation”

**Patrizia Pucci** “Quasilinear Elliptic Equations: regularity and existence results”

## Workshop “Regularity for non-linear pdes *Partially supported by ERC grant*”

### Fourth Week

All lessons to be held in Aula Dini, Palazzo del Castelletto

Date	Time	Speaker
<b>21/09</b> <b>Monday</b>	09:30 - 10:30	<b>Neil Trudinger</b>
	11:00 - 12:00	<b>Neil Trudinger</b>
	15:00 - 16:00	<b>Kari Astala</b>
	16:30 - 17:30	<b>Kari Astala</b>
<b>22/09</b> <b>Tuesday</b>	09:30 - 10:30	<b>Luigi Ambrosio</b>
	11:00 - 12:00	<b>Tedeusz Iwaniec</b>
	15:00 - 16:00	<b>Lucio Boccardo</b>
	16:30 - 17:30	<b>Ernst Kuwert</b>
<b>23/09</b> <b>Wednesday</b>	09:30 - 10:30	<b>Kari Astala</b>
	11:00 - 12:00	<b>Kari Astala</b>
	15:00 - 16:00	<b>Neil Trudinger</b>
	16:30 - 17:30	<b>Neil Trudinger</b>
<b>24/09</b> <b>Thursday</b>	09:30 - 10:30	<b>Giuseppe Buttazzo</b>
	11:00 - 12:00	<b>Cristoph Melcher</b>
	14:30 - 15:30	<b>Ugo Gianazza</b>
	16:00 - 17:00	<b>Vincenzo Vespri</b>
	17:30 - 18:30	<b>Francesca Crispo</b>
<b>25/09</b> <b>Friday</b>	09:30 - 10:30	<b>Neil Trudinger</b>
	11:00 - 12:00	<b>Neil Trudinger</b>
	15:00 - 16:00	<b>Kari Astala</b>
	16:30 - 17:30	<b>Kari Astala</b>

## **List of Courses**

**Neil Trudinger** "Regularity of weak solutions of Monge-Ampère type problems arising in geometry and optimal transportation"

**Kari Astala** "Regularity of nonlinear elliptic PDE's in the plane - the extraordinary methods of geometric function theory"

**Luigi Ambrosio** "Flows in the space of probability measures and convergence of Wigner transforms"

**Tedeusz Iwaniec** "Tba"

**Lucio Boccardo** "Elliptic problems: Estimates in large Sobolev spaces since Calderon-Zygmund"

**Ernst Kuwert** "A Sacks Uhlenbeck type approximation of the Willmore functional"

**Giuseppe Buttazzo** "On some problems in spectral optimization"

**Cristoph Melcher** "Landau-Lifshitz-Gilbert equations: regularity and singular structures"

**Ugo Gianazza** "Continuity of the Saturation in the Flow of Two Immiscible Fluids in a Porous Medium"

**Vincenzo Vespri** "Haranck inequalities for a class of quasilinear degenerate parabolic equations"

**Francesca Crispo** "On the sharp vanishing viscosity limit under Navier type boundary conditions: results and open problems"