

**Programme on
“Nonlinear Flows”
May 30 – July 15, 2016**

organized by

Eduard Feireisl (Czech Academy of Sciences, Prague), Ansgar Jüngel (TU Vienna), Alexander Mielke (WIAS, Berlin), Giuseppe Savaré (U Pavia), Ulisse Stefanelli (U Vienna)

Mini-Course 3

“Sobolev and BV functions in metric measure spaces”

Luigi Ambrosio, SNS Pisa

June 21 – June 23, 2016

• **Tuesday, June 21, 2016**

10:00 – 12:00 **Luigi Ambrosio**

Sobolev and BV functions in metric measure spaces: Lecture 1

• **Wednesday, June 22, 2016**

10:00 – 12:00 **Luigi Ambrosio**

Sobolev and BV functions in metric measure spaces: Lecture 2

• **Thursday, June 23, 2016**

10:00 – 12:00 **Luigi Ambrosio**

Sobolev and BV functions in metric measure spaces: Lecture 3

All talks take place at the ESI, Boltzmann Lecture Hall!

Abstract: In the lectures I will describe recent development of calculus in metric measure spaces, revisiting old and new points of view in the theory of Sobolev and BV functions. I will show how tools from Calculus of Variations, Optimal Transport and PDE allow to establish powerful equivalence results between Eulerian and Lagrangian notions, even in the broad context of metric measure spaces. I will mostly rely on papers written in collaboration with Simone Di Marino, Nicola Gigli and Giuseppe Savaré.