Calculus of Variations, Partial Differential Equations and Dynamical Systems
An orientamento for the curriculum *Advanced mathematics*
Master Degree in Mathematics

Dipartimento di Matematica, Università di Trento

The Department of Mathematics of the University of Trento has a long tradition in research in Calculus of Variations, Partial Differential Equations with strong national and international links.
In the last few years there is strong research on such topics as

- Control Theory and Ordinary Differential Equations (CT&ODE)
- Geometric Analysis (GA)
- Geometric Measure Theory (GMT)
- Nonlinear Partial Differential Equations (NPDE)
- Variational Convergences (VC)

Some people of the Department of Mathematics involved in such topics are:

- CT&ODE: F. Bagagiolo, M. Sabatini
- GA: L. Mazzieri, A. Pinamonti
- GM: S. Delladio, A. Pinamonti, R. Serapioni, F. Serra Cassano
- NPDE: F. Bagagiolo, L. Mazzieri, A. Pinamonti, A. Visintin
- VC: A. Defranceschi, F. Serra Cassano, A. Visintin

Our *orientamento* includes 5 *caratterizzanti* courses in different areas.
Any student is supposed to take all of them to get a wide mathematical background

- Numerical Methods for PDE
- **Advanced Geometry**
- **Advanced Analysis**
- **Stochastic Processes**
- Partial Differential Equations

We offer Courses in Analysis. The more courses you take from this list, the more your thesis topics will be advanced

- Fourier Analysis
- Foundations of Analysis
- Mathematical Control Theory
- Advanced Calculus of Variations
- Geometric Analysis
- Geometric Measure Theory
- Stochastic Differential Equations
- Topics in Mathematical Physics of Quantum Theories
- Mathematical Physics - Relativity and Quantum Theories
- Mathematical Physics - Differential Geometry Methods

For more details feel free to contact :

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