Ph.D course in Geometry and Mathematical Physics

Head of the Ph.D course: Prof. Antonio Lerario
Web site: Geometry and Mathematical Physics

Research lines:

- Integrable systems in relation with differential, algebraic and symplectic geometry, as well as with the theory of random matrices, special functions and nonlinear waves, Frobenius manifolds.
- Deformation theory and virtual classes for moduli spaces of sheaves and of curves, in relation with supersymmetric gauge theories, strings, Gromov-Witten invariants, orbifolds and automorphisms.
- Quantum groups, noncommutative Riemannian and spin geometry, applications to models in mathematical physics.
- Mathematical methods of quantum mechanics.
- Mathematical aspects of quantum Field Theory and String Theory.
- Symplectic geometry, sub-riemannian geometry, stochastic geometry, real algebraic geometry.
- Geometry of quantum fields and strings.
- Complex differential geometry.
- Generalized complex geometry.

Fellowships available: 8
Admission: Academic and scientific qualifications + oral exam
Beginning of the Courses: 3 October, 2022

<table>
<thead>
<tr>
<th>Evaluation of academic and scientific qualifications:</th>
<th>30 points</th>
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<tr>
<td>Access to Oral Exam: minimum mark of 21/30 in the academic and scientific qualifications evaluation up to a maximum of 15 admitted candidates.</td>
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<td>Evaluation of Oral Exam: 70 points</td>
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<td>Total Evaluation: 100 points</td>
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<td>Eligibility: 70 points</td>
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Single Session
Deadline for online submission of applications: 3 February, 2022
Oral Exam: 14 - 18 March, 2022

Admission to the written exam and results of all evaluations will be notified by email.