Research topics and related experts:

- Fluid Mechanics and Hydrodynamics (Proff. Lanzoni, Defina).
- Fluvial and Lagoonal Morphodynamics (Proff. Lanzoni, Defina, Carniello).
- Ecogeomorphology (Proff. Lanzoni, Defina).
- Dynamics of water-limited vegetation (Proff. Botter, Ursino).
- Limnology (Prof. Lanzoni).
- Biofluidodynamics (Prof. Susin).
- Geophysical Fluidodynamics (Prof. Lanzoni).
- Surface hydrology (Proff. Rinaldo, Botter).
- Subsurface hydrology (Proff. Salandin, Camporese, Putti).
- Statistical hydrology and mechanics (Prof. Rinaldo, Maritan, Botter).
- Self-organization and networks in nature (Proff. Rinaldo, Maritan).
- Transport of pollutants within surface and subsurface water bodies (Prof. Lanzoni, Putti, Salandin, Camporese).
- Reclamation of contaminated sites. Solid waste management (Proff. Cossu, Lavagnolo, Raga).
- Slope stability (Proff. Simonini, Cola, Carrubba).
- Environmental geomechanics (Proff. Simonini, Cola, Carrubba).
- Structural mechanics and engineering (Proff. Maiorana, Boso, Pesavento, Sanavia, Salomoni, Modena, Vitaliani, Pellegrino, Scotta).
- Computational mechanics (Proff. Gambolati, Maiorana, Sanavia, Ferronato).
- Advanced numerical methods (Proff. Gambolati, Putti).
- Theory and applications of finite-element methods (Proff. Gambolati, Putti, Ferronato).
- Numerical Linear Algebra (Proff. Ferronato, Janna, Bergamaschi).
- Numerical Methods for PDEs (Proff. Putti, Ferronato).

Available classes for PhD students:

1 MATHEMATICAL METHODS (Proff. Ciatti, Garofalo).

Lebesgue integral. Hilbert spaces. L1 and L2 spaces. Fourier series and transform. Introduction to Partial Differential Equations (PDE).

2 NUMERICAL METHODS (Proff. Bergamaschi, Ferronato, Putti).

Krylov methods for linear systems and eigen-problems. Newton methods for nonlinear equations. Finite Element and Finite Volume methods for PDEs. Numerical methods for hyperbolic equations.

3 STATISTICS AND DATA ANALYSIS (Prof. Botter).

Basic concepts of probability. Stochastic processes and Markov chains. Parameter estimate of PDF's and input/output models. Bayesian inference.

4 CONTINUUM MECHANICS (Prof. Salomoni).

Introduction to tensor/vector analysis. Finite and infinitesimal deformations. Material and spatial description of the velocity field. Rate of deformation. Balance laws. Stress tensor. Energy balance. Material invariance principle. Material symmetry. Isotropic and multiphase materials.

5 FLUID MECHANICS (Proff. Lanzoni).

Turbolence. Geophysical Fluidodynamics. Perturbation Methods. Hydrodynamic Stability.

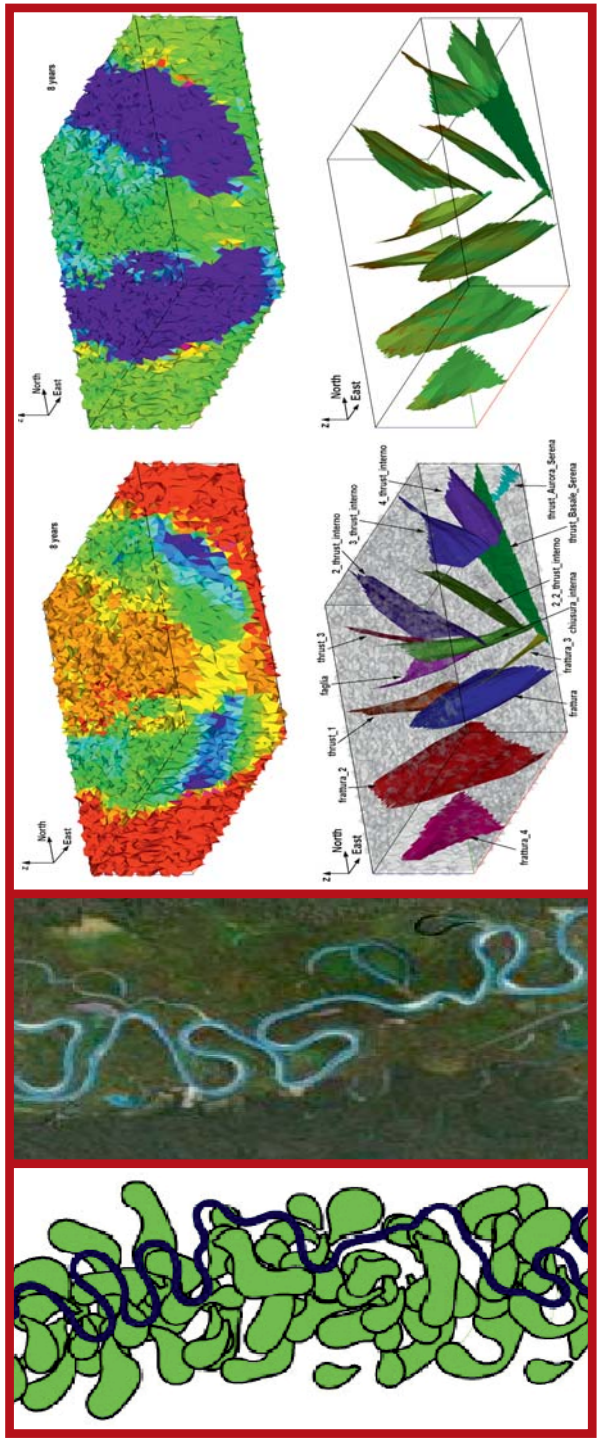
6 STATISTICAL MECHANICS (Prof. Maritan).

Stochastic markovian processes. Langevin & Fokker-Planck equations. Solution of 1D systems and applications to ecosystem modeling.

ICEA

Info for PhD applicants from the People's Republic of China

Università degli Studi di Padova



Ph.D. applications from the People's Republic of China

The 3-year Ph.D. School in Civil and Environmental Engineering Sciences at the Department of Civil, Environmental and Architectural Engineering (ICEA) of the University of Padova offers an advanced course of studies for a comprehensive education in the fields of Hydrodynamics, Hydrology, Environmental and Geotechnical Engineering, Computational Mechanics, Structural Engineering and Numerical Methods. The School provides the students with an advanced education that can be exploited in both public and private research institutions, with particular care devoted to the mathematical and numerical modelling in all the fields of Civil and Environmental Engineering.
The exchange and cooperation with international partners is strongly encouraged.

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中华人民共和国公民的博士学位研究生申请说明

帕多瓦大学土木环境与建筑工程系为三年制的土木与环境工程科学博士学位提供包括水力学、水文学、环境与地质工程、计算力学、结构力学与数值方法方向的综合性高等课程体系。

研究生院提供的高等教育注重培养学生在土木和环境工程领域的数学与数值模拟能力，有利于学生毕业后进入公共或民间研究机构工作。研究生院非常鼓励学生参加国际交流与合作。

研究生院每年至少向意大利或国际学生提供5 个奖学金，奖学金来源于意大利教育部，大学与研究（MIUR)机构，Cariparo 基金和欧洲研究捐助。对于来自中华人民共和国的申请人还可以通过帕多瓦大学的选拔机制获取其它机会。

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