Doctoral Course	MATHEMATICAL SCIENCES
Macro-area	Physical Sciences and Engineering
Department name	Department of Mathematics
Webpage	*https://dottorato.math.unipd.it/*
Research topic A	**Nonlinear differential equations and stochastic models** This research line will address several aspects of Nonlinear Partial Differential Equations in connection with stochastic processes, control theory, differential games, and geometry. The research options include Mean-Field Games and control of multi-agent systems, with applications to biology and economics, Mathematical Finance, conservations laws on networks, with applications to traffic flows and fluid dynamics, optimal control of constrained systems, sub-Riemannian differential geometry.
Research topic B	**Arithmetic and complex algebraic geometry** The research line in arithmetic algebraic geometry has two main topics. The first sits in the complex geometry setting, with a special attention to moduli spaces of curves. The second research line has a more arithmetic flavour, and it concerns especially the theory of motives, and the theory of p-adic modular forms, with possible applications to global problems such as the Birch and Swinnerton-Dyer conjecture.
Link to the UNIPhD Call (Academic Year 2022/2023)	*https://www.unipd.it/en/uniphd*

REGIONE DEL VENETO

HR EXCELLENCE IN RESEARCH

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