Dottorato di Ricerca in Fisica – PhD in Physics
(XLII Ciclo)

Research Project:

Title: "**New aspects and applications of field theories**"

Abstract:

This project will deal with new applications of field theoretical methods, aiming at an interdisciplinary landscape of applications, ranging from quantum field theory to complex systems, from cosmology and gravitational waves to high energy physics and quantum gravity. Emphasis will be given to adapt and implement to some of the above mentioned fields, approaches developed for other problems, such as renormalization group and resummations, effective field theories and symmetry-based bootstrap methods, large N limits and holography. Numerical methods, such as lattice field theory, Montecarlo and machine learning algorithms will also be part of the explored tools.
All candidates with a strong background in quantum field theory, cosmology and astoparticle physics, and statistical mechanics are encouraged to apply.

Prof. Massimo Pietroni: massimo.pietroni@unipr.it