Dottorato di Ricerca in Fisica
(XLI Ciclo)

Proposta di Progetto di Ricerca

"**Nuovi aspetti e applicazioni di teorie di campi**"
"**New aspects and applications of field theories**"

This project will explore new applications of field-theoretical methods, aiming to develop an interdisciplinary range of applications spanning quantum field theory, complex systems, cosmology, gravitational waves, high-energy physics, and quantum gravity. Particular emphasis will be placed on adapting and applying techniques originally developed for other contexts—such as the renormalization group and resummation methods, effective field theories, symmetry-based bootstrap approaches, large-N expansions, and holography—to the aforementioned areas.
The project will also incorporate numerical tools, including lattice field theory, Monte Carlo methods, and machine learning algorithms.
Candidates with a strong background in quantum field theory and statistical mechanics are strongly encouraged to apply.

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