



SEMINARI RICERCA E FORMAZIONE

Venerdì 13 Febbraio 2026

ore 14:30-15:30

AULA 204



A nontechnical introduction to Physics on Quantum Spacetime: Noncommutative field theory and noncommutative gravity

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A long-standing challenge in theoretical physics is the construction of a consistent quantum theory of gravity. Several theoretical arguments suggest that at extremely small distances the classical picture of spacetime as a smooth continuum may break down. Instead, spacetime itself may acquire a quantum structure.

Noncommutative geometry provides a mathematical framework for exploring this possibility by replacing classical coordinates with non-commuting operators, leading to a natural generalization of geometry and field theory. In this non technical talk we introduce the basic ideas of noncommutative spacetime and discuss how they arise in different research areas of modern theoretical physics. We then present some recent results in noncommutative field theory and noncommutative gravity, and outline how such models may shed light on open questions in fundamental physics.

Il seminario è promosso dal Prof. Paolo Aschieri

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