

Colloqui della Classe di Scienze

Anno Accademico 2025/2026

Sala Stemmi

Palazzo della Carovana
Scuola Normale Superiore
Piazza dei Cavalieri, 7 - PISA

12 OCTOBER 2026

h 3.00 p.m.

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RICCI FLOW AND COMPLEX GEOMETRY

ABSTRACT:

Ricci flow is a geometric analogue of the heat conduction equation: it evolves the geometry of a curved space with the aim of making its curvature more uniform. Introduced by Richard Hamilton in 1982, it was the key tool in Perelman's proof of the Poincaré conjecture, a century-old problem about the shape of three-dimensional spaces. But this evolution need not simply smooth things out: singularities can develop. What determines how a space evolves, and what can this evolution reveal about its geometry? I will explore these questions for geometric spaces defined using complex numbers, describing what is known and what remains conjectural.

