Dipartimento di Matematica

An algebro-geometric version of the Poincaré conjecture

Data
14/11/2024 - 11:00

Aula
Aula 1

Speaker
Mirko Mauri

Categoria
Seminari di Algebra e Geometria Algebrica

Afferenza
Université Paris Cité

Sede
Palazzo Campana

Descrizione

Abstract : Dual complexes are CW-complexes, encoding the combinatorial data of how the irreducible components of a simple normal crossing pair intersect. The algebraic geometry of the divisor is reflected in the topology of the dual complex. One of the most tantalizing conjectures in the field is the expectation that the dual complex of an anticanonical divisor is a sphere or a finite quotient of a sphere. Equivalently, a combinatorial Calabi-Yau variety should resemble a sphere. I will provide an overview of the current state of the conjecture, and report on joint work with Joaquin Moraga. We introduce a numerical invariant called birational complexity that, among other properties, measures the degree to which the dual complex of an anticanonical divisor is close to be a sphere.