

Conference Ball Quotient surfaces and Lattices

Luca Di Cerbo :

Title : Seshadri constants, fake projective planes, and related topics

Abstract : Seshadri constants measure the local positivity of a nef line bundle over a projective variety. They are quite ubiquitous in modern complex algebraic geometry, and they provide effective tools to study projective embeddings. Fake projective planes are interesting examples of smooth projective surfaces with ample canonical class. In this talk, I will show how to exactly compute the Seshadri constants of the canonical line bundle of any fake projective plane. As fake projective planes have finite and quite often trivial automorphism group, it is quite interesting that one can exactly compute these numerical invariants. Finally, I will discuss low degree curves in fake projective planes and their connection with exceptional collections. The second part of this talk covers joint work with G. Di Brino.