

Fano varieties

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Fano varieties are projective varieties whose anticanonical bundle is ample. They are important from many points of view, and their geometry is very rich : they are covered by rational curves, are simply connected, and have finitely many deformation types in any given dimension. For the purpose of the Minimal Model Program, it is important to study singular Fano varieties as well.

The lectures will present various results about Fano varieties. The techniques are Mori's bend-and-break lemmas, properties of rational curves on smooth projective varieties (here some material may be borrowed from Kollár's lectures) and, if I have time, Atiyah's index theorem to prove the simple connectedness of weak Fano varieties (a theorem of Takayama).