

Algebraic Geometry Seminar

On fundamental groups of algebraic surfaces with a finite group of automorphisms

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Abstract: (joint work with R. V. Gurjar) I will talk about new results on fundamental groups for some classes of fibered algebraic surfaces with a finite group of automorphisms. The methods actually compute the fundamental groups of the surfaces under study upto finite index. The corollaries include an affirmative answer to Shafarevich conjecture on holomorphic convexity, Nori's well-known question on fundamental groups and free abelianness of second homotopy groups for these surfaces. We also prove a theorem that bounds the multiplicity of the multiple fibers of a fibration for any algebraic surface with a finite group of automorphisms G in terms of the multiplicities of the induced fibration on X/G . If X/G is a \mathbb{P}^1 -fibration, we show that the multiplicity actually divides $|G|$. This theorem on multiplicity, which is of independent interest, plays an important role in our theorems.

Thursday, November 12 at 12:00 PM in SEO 427