

Annalisa Grossi

Title: Automorphisms of irreducible holomorphic symplectic manifolds of OG_6 type.

Abstract: In the 80's Beauville generalized several foundational results of Nikulin on automorphism groups of K3 surfaces to irreducible holomorphic symplectic (ihs) manifolds. Since then the study of automorphism groups of these manifolds got very much attention. Around 2000 O'Grady introduced two new sporadic deformation classes of ihs manifolds in dimension six and in dimension ten, called manifolds of OG_6 type and of OG_{10} type respectively. The classification of automorphisms of ihs manifolds is related to the study of the representation map: $\text{Bir}(X) \subset \text{Aut}(X) \rightarrow O(H^2(X, \mathbb{Z}), q_X)$. In this talk I will give classification results of nonsymplectic automorphisms and of symplectic birational transformations of manifolds of OG_6 type, and I will show a result that states that every symplectic automorphism of a manifold of OG_6 type has trivial action on the second integral cohomology.

O'Grady introduced the new ihs manifold in dimension six as the resolution of singularities of the Albanese fiber of a moduli space of sheaves on an abelian surface. Due to this geometric model I will present a result which characterizes when X of OG_6 type is birational to the resolution of the Albanese fiber of a moduli space of sheaves on an abelian surface with a lattice-theoretical criterion; then I will explain under which conditions an automorphism of a manifold of OG_6 type is induced from an automorphism of the abelian surface involved in the construction of the moduli space.