İSTANBUL ANALYSIS SEMINARS

AUTOMORPHISM GROUPS OF COMPACT COMPLEX MANIFOLDS

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Abstract: It is well known that a compact complex surface admits a holomorphic automorphism with positive topological entropy if it is Kähler and obtained from the projective plane $\mathbb{P}^2(\mathbb{C})$, torus, $K3$ surface or Enriques surface by a finite sequence of point blow-ups. In this talk, I will discuss some natural constraints on the size of the automorphism groups of higher dimensional compact complex manifolds. For instance, if X is a rational manifold which is obtained from $\mathbb{P}^k(\mathbb{C})$ by a finite sequence blow-ups along smooth centers of dimension at most r with $k > 2r + 2$ then the image of the automorphism group of X in $GL(NS(X))$ is a finite group. In particular, every holomorphic automorphism $f : X \to X$ has zero topological entropy. The talk will be based on the joint work with S. Cantat (École Normale Supérieure, France).

***Date*:** December 28, 2012
***Time*:** 15:40
***Place*:** Sabancı University, Karaköy Communication Center
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