

GAUGE THEORY & TOPOLOGY SEMINAR

Mark McLean (MIT)

The growth rate of symplectic homology and algebraic Stein fillings

The unit cotangent bundle of any manifold is Stein fillable. I will show that if I have an rationally hyperbolic manifold then its unit cotangent bundle cannot be filled by a Stein domain whose completion is symplectomorphic a smooth affine variety. This also shows in particular that its cotangent bundle is not symplectomorphic to any smooth affine variety. To do this I show that any Stein manifold symplectomorphic to a smooth affine variety outside a compact set has polynomial growth rate. Then I use the fact that the growth rate of T^*M is greater than the growth rate of the sum of its Betti numbers.

Date: Friday, October 1

Time: 3:30-4:30

Location: Harvard Mathematics Department, Science Center 507

Contact: Andrew Cotton-Clay (acotton@math.harvard.edu)

<http://math.harvard.edu/~acotton/seminar.html>