ODTU-Bilkent Algebraic Geometry

Extremal Kähler metrics and the moment map

By

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Abstract: An extremal Kähler metric is a canonical Kähler metric, introduced by E. Calabi, which is somewhat more general than a constant scalar curvature Kähler metric. The existence of such a metric is an ongoing research subject and expected to be equivalent to some form of geometric stability of the underlying polarized complex manifold (M,J,[ω]) –the Yau-Tian-Donaldson conjecture. Thus it is no surprise that there is a moment map, the scalar curvature (A. Fujiki, S. Donaldson), and the problem can be described as an infinite dimensional version of the familiar finite dimensional G.I.T.

I will describe how the moment map can be used to describe the local space of extremal metrics on a symplectic manifold. Essentially, the local picture can be reduced to finite dimensional G.I.T. In particular, we can construct a course moduli space of extremal Kähler metrics with a fixed polarization $[\omega] \in H^2(M,R)$, which is an Hausdorff complex analytic space

Date: Friday, April 14, 2023
Time: 15:40 (GMT+3)
Place: Zoom

To request the event link, please send a message to sertoz@bilkent.edu.tr