

Classical Geometry to the aid of Ricci Flow

Abstract:

We prove structural results for the Ricci flow on open manifolds of nonnegative complex sectional curvature. First we achieve short time existence without requiring upper curvature bounds.

During the talk we will introduce the basic notions to understand the problems we are dealing with. Also we will explain the main difficulties and the techniques we use to overcome them. For instance, the key for the proof of existence comes from exploiting ideas of Classical Differential Geometry; more precisely, we consider the doubling of convex sets contained in a Cheeger-Gromoll convex exhaustion and solve the singular initial value problem for the Ricci flow on these closed manifolds.

In this way, we obtain a sequence of closed solutions of the Ricci flow with nonnegative complex sectional curvature which subconverge to a Ricci flow on the starting open manifold.

Prof. Dr. Esther Cabezas-Rivas