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The Kahler–Ricci flow on complete non-compact manifolds and uniformization

Introduced in 1982 by Richard Hamilton, the Ricci flow is one of the most important equations in differential geometry. It is a geometric evolution equation providing a powerful analytic tool used to deform a Riemannian metric on a Riemannian manifold. The Ricci flow has found fundamental application in topology, Riemannian geometry and complex/Kahler geometry. In this talk I will discuss the Kahler–Ricci flow on complete non-compact Kahler manifolds. I will then discuss the application of the Kahler–Ricci flow to the uniformization of complete non-compact Kahler manifolds and to Yau's uniformization conjecture. Yau's conjecture states: a complete non-compact Kahler manifold with positive holomorphic bisectional curvature is biholomorphic to complex Euclidean space.