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STABILITY AND THE CONVERGENCE OF THE KÄHLER-RICCI FLOW

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Abstract: A central problem in Kähler geometry is the existence of Kähler-Einstein metrics, which has been conjectured by Yau to be equivalent to stability in the sense of geometric invariant theory. Kähler-Einstein metrics are the fixed points of the Kähler-Ricci flow, so the problem can be viewed as that of establishing the equivalence between the convergence of the flow and stability in GIT. We describe progress in this direction, and in particular how the convergence of the Kähler-Ricci flow is determined by a stability condition with respect to the group of diffeomorphisms.