

Ann. Sc. Norm. Super. Pisa Cl. Sci. (5)
Vol. XI (2012), 167-175

Stability of the Calabi flow near an extremal metric

HONGNIAN HUANG AND KAI ZHENG

Abstract. We prove that on a Kähler manifold admitting an extremal metric ω and for any Kähler potential φ_0 close to ω , the Calabi flow starting at φ_0 exists for all time and the modified Calabi flow starting at φ_0 will always be close to ω . Furthermore, when the initial data is invariant under the maximal compact subgroup of the identity component of the reduced automorphism group, the modified Calabi flow converges to an extremal metric near ω exponentially fast.

Mathematics Subject Classification (2010): 53C44 (primary); 32Q15, 32Q26 (secondary).