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**Zhuang-dan Daniel Guan\*** (zguan@math.ucr.edu), Department of Mathematics, University of California at Riverside, Riverside, CA 92521. *Strict slope stability and the existence of Calabi Extremal Metrics*. Preliminary report.

We had found in 2004-2005 that the existence of the Calabi extremal metrics on compact complex almost homogeneous manifolds of cohomogeneity one is equivalent to the negativity of an integral. As a consequence we obtained many new compact Kahler-Einstein manifolds as well as non-Kahler-Einstein Fano manifolds.

The newest development is that we found that the integral is just the slope limit in the Thomas slope stability. As a consequence, we conjecture that the existence of the Calabi extremal metrics is the same as the STRICT slope stability. The strict slope stability requires a strict inequality and therefore is expected to be stronger than Thomas' slope stability.

We also use a modified Aubin method to prove the existence. This approach is a little bit more difficult than our original approach. However, the same estimate works. (Received March 06, 2008)