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Alice Chang (chang@math.princeton.edu), Department of Mathematics, Fince Hall, Princeton University, Princeton, NJ 08854, **Jie Qing*** (qing@ucsc.edu), Department of Mathematics, University of California, Santa Cruz, CA 95064, and **Paul Yang** (yang@math.princeton.edu), Department of Mathematics, Fince Hall, Princeton University, Princeton, NJ 08854. *Conformal gap theorems and finiteness theorems*. Preliminary report.

In this talk we will present a conformal gap theorem and a finite diffeomorphism theorem for a class of Bach flat 4-manifolds. Our proofs reply on the cmopactness results of Tian and Viaclovsky and a detailed study of the bubblings. (Received February 21, 2005)