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**Zhou Zhang\*** (zhangou@maths.usyd.edu.au), Zhou Zhang, Carslaw Building, School of Mathematics and Statistics, University of Sydney, NSW 2006, Australia. *Spatial Asymptotic Behaviors of Kähler-Ricci Flows and Kähler-Einstein Metrics over Quasi-Projective Manifolds*. Preliminary report.

In this joint project with Frederic Rochon, we further study the Kähler-Ricci flow and Kähler-Einstein metrics in the quasi-projective setting,  $X = \overline{X} \setminus D$  with  $D$  having at most normal crossings as singularity and the transversal direction being Poincare metric asymptotically. This is the classic setting already studied by many people. In our work, the notion of manifold with corners is seriously involved when coming to describe the spatial asymptotic behaviors of the solutions for these geometric PDEs. For the Kähler-Einstein metrics, one needs to consider polyhomogeneous expansions (involving logarithmic terms in general) for a precise description at the asymptotic boundary. (Received June 20, 2011)