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# Joint Geometric Analysis Seminar

(Part of MIST program)

## *Lecture Series on Geometric Analysis: Geometric flows on open manifolds*

*Dr. Luke Peachey*  
*The Chinese University of Hong Kong*

### *Abstract*

First talk: Classifying complete two-dimensional Ricci flows.

In the absence of strong a priori curvature bounds, there are many fundamental open problems regarding the existence and uniqueness of solutions to the Ricci flow equation. After a brief introduction to the topic, we will begin with an exposition of a recently proven one-to-one correspondence between complete conformal Ricci flows and non-atomic (non-trivial) Radon measures defined over a conformal surface. By utilising this correspondence, we give a complete classification of all two-dimensional expanding Ricci solitons. If time allows, we shall also discuss a low dimensional rigidity result for complete Ricci flow spacetimes and highlight how a higher dimensional analogue of such a theorem would resolve a long-standing conjecture from the literature.

Second talk: TBA

Date: 23, 30 Nov 2023 (Thursday)  
Time: 10:30am-noon  
Venue: AB1 502a

*All are Welcome*