

Department of Mathematics

The Institute of Mathematical Sciences

數學系

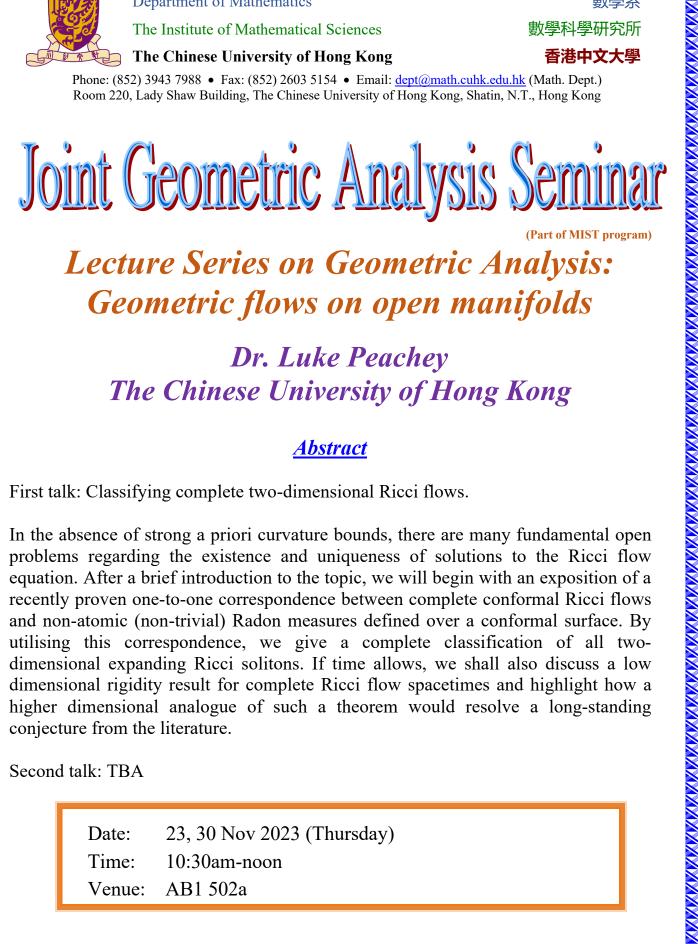
數學科學研究所

The Chinese University of Hong Kong

香港中文大學

(Part of MIST program)

Phone: (852) 3943 7988 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk (Math. Dept.) Room 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong



## 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 twodimensional 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

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

## All are Welcome