



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PDE

Infinite-time blowing-up solutions to small perturbations of the Yamabe flow

By

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Abstract

In this talk, we will examine a PDE aspect of the Yamabe flow as an energy-critical parabolic equation of the fast-diffusion type. It is well-known that under the validity of the positive mass theorem, the Yamabe flow on a smooth closed Riemannian manifold M exists for all time t and uniformly converges to a solution to the Yamabe problem on M as $t \rightarrow \infty$. We will observe that such results no longer hold if some arbitrarily small and smooth perturbation is imposed on it, by constructing solutions to the perturbed flow that blow up at multiple points on M in the infinite time. We also concern the stability of the blow-up phenomena under a negativity condition on the Ricci curvature at blow-up points. This is joint work with Monica Musso (University of Bath, UK).

Date : 17 September 2021 (Friday)

Time : 9:00am

Zoom Meeting : <https://hkust.zoom.us/j/97445907096> (Passcode: 875622)

All are Welcome!