

I. Ricci flow background

- Fix a compact D -dimensional manifold M .
- Ricci flow is a first-order evolution on the space of Riemannian ("Euclidean") metrics on M :

$$\frac{\partial g_{\mu\nu}(x, \lambda)}{\partial \lambda} = -2 R_{\mu\nu}(x, \lambda)$$

$$x \in M \quad \lambda = \text{flow "time"}$$

- Basic properties:
 - A. Local on M
 - B. Diffeomorphism invariant on M
(i.e. defines a flow on the space of diffeo classes of metrics)
 - C. Non-linear