



Colloquium

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GEOMETRIC FLOWS ON
MANIFOLDS WITH BOUNDARY

Thursday, February 2, 2012

4:15 p.m. in ES-143

(tea & coffee at 3:30 p.m. in ES-152)

ABSTRACT. Geometric flows are partial differential equations that describe evolutions of geometric objects. They are typically used to tackle problems in topology, mathematical physics, and several other fields. The canonical example of a geometric flow is the heat equation on a Riemannian manifold. In the first part of the talk, we will discuss the fundamental features of this equation. We will also speak about two estimates for its positive solutions on manifolds with boundary. A more contemporary example of a geometric flow is the Ricci flow for a Riemannian metric. It is mostly famous for its role in the proof of the Poincaré conjecture. The second part of the talk will be devoted to the main features and the behavior of the Ricci flow on manifolds with boundary. Towards the end, we will give a brief overview of related problems.