

Bay Area Differential Geometry Seminar
Saturday, April 30, 2016, 10 AM-5 PM
U. C. Santa Cruz, McHenry Library Building,
Room 4130

Parking is plentiful and unrestricted on weekends. The most convenient lot is the Hahn Student Services lot (Lot 101 , GPS coordinate 36.994992, -122.057241). The Theater Lot is also quite convenient.

- 10:00–11:00 **Reception, Morning Coffee** McHenry 4161.
- 11:00–12:00 **Mikhail Kapovich, UC Davis:**
Finsler compactification of nonpositively curved symmetric spaces.
- 12:00–2:00 **Lunch**

A cafe serves lunch on the main floor of the building we meet in. There are a number of lunch places a ten to fifteen minute drive away, off-campus.

- 1:45–2:00 Organizational meeting to plan next BADGS
- 2:00–3:00 **Grad student talks.**

Connor Jackman, UC Santa Cruz:
Sectional Curvatures for the Strong Force N-Body Problem.

Nick Sumner Edelen, Stanford:
Weak mean curvature flow with free-boundary.

- 3:00–4:00 **Afternoon Tea-Coffee**
- 4:00–5:00 **Tom Ilmanen, ETH Zürich:**
Generic mean curvature flows in R^3 .
- 6:00 **Dinner** (*Please sign up using this link: [signup list.](#)*)

Participants and their significant others are invited to a dinner to be arranged at a local restaurant on Saturday evening. The cost of the dinner will be reduced for students and postdocs. Details will be forthcoming on the signup page for the dinner, which you can access by the link just above.

Abstracts

Kapovich: I will describe a class of invariant "polyhedral" Finsler metrics on symmetric spaces. I will further explain how to use Finsler horofunctions to construct the maximal Satake compactification for symmetric spaces of non-compact type. This construction is then used to bordify (as orbifolds with corners) locally symmetric spaces by analogy with the standard bordification of hyperbolic manifolds of infinite volume via quotients of domains of discontinuity at infinity. This is a joint work with Bernhard Leeb.

Jackman: The Jacobi-Maupertuis principle reparametrizes dynamics at a fixed energy level into the geodesic flow of a certain metric. Montgomery showed that for the strong force 3-body problem this geodesic flow is hyperbolic which led to nice dynamical consequences. This talk will be about the attempt to generalize Montgomery's results to $N > 3$.

Edelen: A surface has geometric free-boundary in a barrier hypersurface if its boundary meets the barrier orthogonally, like a soap bubble on a bathtub. We extend Brakke's original notion of weak mean curvature flow to allow for a free-boundary condition in a solid barrier, and prove a local regularity theorem in the spirit of White. These flows interact with the barrier differently than free-boundary mean curvature flow modeled by immersions, for which the barrier is "invisible," and toy examples show our definition is necessary to admit a compactness theorem.