

**Speaker:** **Guillaume Dreyer**  
University of Notre Dame

Thursday, September 26, 2013

2:00 pm

Room: 258 Hurley Hall

**Title:** Anosov representations along a geodesic lamination

**Abstract:**

Let  $S$  be a closed, connected, oriented surface of genus  $g \geq 2$ . Anosov representations were introduced by F. Labourie as a tool to study higher-rank representations  $\pi_1(S) \rightarrow \mathrm{PSL}_n(\mathbb{R})$ , especially Hitchin representations, i.e. elements lying in the Hitchin components  $\mathrm{Hit}_n(\mathbb{R})$  of the  $\mathrm{PSL}_n(\mathbb{R})$ -character variety  $\mathcal{R}_{\mathrm{PSL}_n(\mathbb{R})}(S)$ ; such components generalize Teichmüller components in the case where  $n = 2$ . In this talk, we analyze properties of representations that are Anosov along a maximal geodesic lamination  $\lambda$  in  $S$ . An important tool for our study are the length functions of a  $\lambda$ -Anosov representation. We then introduced deformations for  $\lambda$ -Anosov representations that generalize Thurston's cataclysms for hyperbolic surfaces, and describe the variation of the length functions under such deformations. As an application, we show that cataclysm paths are complete in the (open) subset of  $\lambda$ -Anosov representations, and correspond to analytic submanifolds of the character variety  $\mathcal{R}_{\mathrm{PSL}_n(\mathbb{R})}(S)$  of dimension  $(n - 1)(6g - 6) + \lfloor \frac{n-1}{2} \rfloor$ .