

Geometry, Groups and Dynamics/GEAR Seminar  
(held at the Illinois hub of GEAR )

**12:00 pm, Tuesday, September 26, 2017, 243 Altgeld Hal**

**David Dumas (University of Illinois at Chicago)**

**Limits of cubic differentials and projective structures**

A construction due independently to Labourie and Loftin identifies the moduli space of convex  $\mathbb{R}P^2$  structures on a compact surface  $S$  with the bundle of holomorphic cubic differentials over the Teichmueller space of  $S$ . We study pointed geometric limits of sequences that go to infinity in this moduli space while remaining over a compact set in Teichmueller space. For such a sequence, we construct a local limit polynomial (in one complex variable) which describes the rate and direction of accumulation of zeros of the cubic differentials about the sequence of base points. We then show that this polynomial determines the convex polygon in  $\mathbb{R}P^2$  that is the geometric limit of the images of the developing maps of the projective structures. This is joint work with Michael Wolf.

[Video](#)