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

12:00 pm, Thursday, May 4, 2017, 243 Altgeld Hall
Brian Collier (University of Maryland)
The geometry of maximal SO(2,n) representations

Abstract: Like Hitchin representations, the set of maximal representations of a surface group into a Lie group of Hermitian type form connected components of representations with Labourie's Anosov property. For such representations, Guichard and Wienhard have constructed geometric structures modeled on certain flag varieties. In this talk we will use Higgs bundle techniques to construct a unique maximal space-like surface in the pseudo-Riemannian hyperbolic space H2,n-1 associated to any maximal SO(2,n) representation. Using the geometry of this surface, we construct geometric structures on certain homogeneous bundles on the surface and prove that they agree with those of Guichard-Wienhard. As a corollary, we also prove (a generalization of) a conjecture of Labourie for all maximal representations into rank 2 Hermitian Lie groups.This is based on joint work with Nicholas Tholozan and Jérémy Toulisse.
Video