

Topology, Algebraic Geometry, & Dynamics Seminar

Special nilpotents and Higher Teichmüller spaces.

Brian Collier

Department of Mathematics
University of Maryland, College Park

We will discuss how higher Teichmüller components of the space of representations of the fundamental group of a closed surface into a real Lie group arise from special nilpotent elements of complex semisimple Lie algebras. In particular, such a nilpotent gives rise to a real Lie group G and an embedding of $PSL(2, \mathbb{R})$ in G . The classification of such special nilpotents turns out to be equivalent to Guichard and Wienhard's recent classification of Theta-positive structures, which is conjecturally how all higher Teichmüller components arise. The upshot of thinking of special nilpotent elements is that we can use SL_2 representation theory to parameterize certain components of the moduli space of surface group representations using Higgs bundles. This talk will not assume you know anything about Higgs bundles.

Date: **Friday, April 19, 2019**

Time: **2:30-3:20 pm**

Place: **4106 Exploratory Hall**

For special accommodations, please contact Sean Lawton via email at slawton3@gmu.edu.