

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

**12:00 pm, Tuesday, January 16, 2018, 243 Altgeld Hall**

**Georgios Kydonakis (Illinois)**

**A Higgs bundle construction for representations in exceptional components of  $\mathrm{Sp}(4, \mathbf{R})$ -character varieties**

Abstract: For a compact Riemann surface of genus  $g \geq 2$ , the components of the moduli space of  $\mathrm{Sp}(4, \mathbf{R})$ -Higgs bundles, or equivalently the  $\mathrm{Sp}(4, \mathbf{R})$  character varieties, are partially labeled by an integer  $d$  known as the Toledo invariant. The subspace for which this integer attains a maximum has been shown to have  $3 \cdot 2^{2g} + 2g - 4$  many components. A gluing construction between parabolic Higgs bundles over a connected sum of Riemann surfaces provides model Higgs bundles in a subfamily of particular significance. This construction is formulated in terms of solutions to the Hitchin equations, using the linearization of a relevant elliptic operator.

Video (unavailable)