

Geometry, Topology and Dynamics Seminar

Parabolic Higgs bundles and the Fourier-Mukai transform

Nathan Clement (Wisconsin)

Abstract: We work with some moduli spaces of (parabolic) Higgs bundles which come in infinite families indexed by rank. I'll give some motivation for the study of parabolic Higgs bundles, but the main problem will be to describe the moduli spaces. By applying some integral transforms, most importantly the Fourier-Mukai transform associated to the Poincare line bundle, we are able to reduce the rank of the problem and eventually get a good presentation of the moduli spaces. One fun technique involved in the argument deals with the spectrum of a one-parameter family of linear operators. When such an operator degenerates to one that is diagonalizable with repeated eigenvalues, the spectrum of the operator admits a scheme-theoretic refinement in a certain blowup which carries more information than simply the eigenvalues with multiplicity.

Monday, April 10 at 3:00 PM in SEO 636