

Geometry, Physics, and Representation Theory
Northeastern University

Ana Balibanu
Harvard University

Monday, November 20, 3:50-4:50 pm, Lake Hall 509

The wonderful compactification and the universal centralizer

Abstract

Let G be a complex semisimple algebraic group of adjoint type and \overline{G} the wonderful compactification. We show that the closure in \overline{G} of the centralizer G^e of a regular nilpotent $e \in \text{Lie}(G)$ is isomorphic to the Peterson variety. We generalize this result to show that for any regular $x \in \text{Lie}(G)$, the closure of the centralizer G^x in \overline{G} is isomorphic to the closure of a general G^x -orbit in the flag variety. We consider the family of all such centralizer closures, which is a partial compactification of the universal centralizer. We show that it has a natural log-symplectic Poisson structure that extends the usual symplectic structure on the universal centralizer.