

1173-17-314

Lee Andrew Jenkins* (lee.jenkins25@uga.edu), 200 D.W. Brooks Drive, Boyd Graduate Studies Research Center, 200 D.W. Brooks Drive, Boyd Graduate Studies, Athens, GA 30602. *On the geometry of the nilpotent cone for the Lie superalgebra $\mathfrak{gl}(m|n)$.*

Many aspects of the representation theory of a Lie algebra and its associated algebraic group are governed by the geometry of their nilpotent cone. An analogue of the nilpotent cone \mathcal{N} for Lie superalgebras has been introduced by the author and Nakano, and it has been shown that for a simple classical Lie superalgebra the number of nilpotent orbits is finite. Furthermore, the finiteness result for \mathcal{N} extends and generalizes the work of Duflo and Serganova on the commuting variety \mathcal{X} . However, much is still unknown about the geometry and representation theory of the nilpotent orbits for Lie superalgebras. In this talk, we discuss more recent geometric results on \mathcal{N} for the general linear Lie superalgebra $\mathfrak{gl}(m|n)$. In particular, we compute the dimensions of \mathcal{N} and the centralizers of the nilpotent orbits, determine the irreducible components of \mathcal{N} , and show that \mathcal{N} is a complete intersection. (Received September 21, 2021)