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**Amber Russell\*** (arussell@math.lsu.edu). *Graham's Variety and Perverse Sheaves on the Nilpotent Cone*. Preliminary report.

In recent work, Graham has constructed a variety with a map to the nilpotent cone that is similar to the Springer resolution. However, Graham's map differs from the Springer resolution in that it is not in general an isomorphism over the principal orbit, but rather the universal covering map. This map gives rise to a certain semisimple perverse sheaf on the nilpotent cone. In this talk, we discuss the problem of describing the summands of this perverse sheaf. For type  $A$ , a key tool is a description of the affine paving of Springer fibers given by Tymoczko that lends itself nicely to understanding the fibers of Graham's map. (Received August 28, 2011)