1051-22-145 **Jared L. Culbertson*** (`jared@math.lsu.edu`), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. *Perverse Poisson sheaves on the nilpotent cone.*

If G is a complex reductive algebraic group with Lie algebra $\mathfrak{g}$, then the nilpotent cone $\mathcal{N} \subset \mathfrak{g}^*$ admits a Poisson stratification which coincides with the stratification by coadjoint orbits. We exploit this connection to study the (G-equivariant) perverse coherent sheaves of Bezrukavnikov-Deligne. Specifically, we develop a basic theory of the Poisson derived category including the perverse Poisson t-structure. It is then possible to relate the resulting perverse Poisson sheaves to perverse coherent sheaves. (Received August 22, 2009)