Myron Minn-Thu-Aye* (myron.minn-thu-aye@uconn.edu). Perverse coherent sheaves, properly stratified categories, and multiplicity computations. Preliminary report.

Let $G$ be a complex reductive algebraic group, and $\mathcal{N}$ the nilpotent cone of its Lie algebra. The category of perverse coherent sheaves on $\mathcal{N}$ possesses the structure of a properly stratified category, which closely resembles the structure of category $\mathcal{O}$. By studying this structure, together with an equivalence between coherent sheaves on $\mathcal{N}$ and constructible sheaves on the affine Grassmannian, we develop an effective algorithm to compute multiplicities of simple objects in perverse coherent sheaves. (Received January 27, 2014)