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# Sheaves on nilpotent cones, Fourier transform, and a geometric Ringel duality

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The "Ringel dual" of a quasi-hereditary algebra  $A$  is a new quasi-hereditary algebra  $A'$  that is derived-equivalent to  $A$ , via a functor that sends tilting  $A$ -modules to projective  $A'$ -modules. Geometric versions of this notion—that is, derived equivalences of constructible sheaves that send tilting perverse sheaves to projective perverse sheaves—have been studied on flag varieties by Beilinson–Bezrukavnikov–Mirkovic, Yun, and others. In this talk, I will discuss geometric Ringel duality for the nilpotent cone in type  $A$ , using the Fourier-Sato transform. This construction leads to a new proof of Donkin's algebraic result that the Schur algebra is self-Ringel-dual. (In types other than  $A$ , the same construction still gives a derived equivalence, but for now lacks a corresponding algebraic interpretation.) This is joint work with C. Mautner.