The generalized Springer correspondence for disconnected reductive groups

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The generalized Springer correspondence provides a canonical partition of simple G-equivariant perverse sheaves on the nilpotent cone of a reductive group G into disjoint subsets known as induction series. Each series corresponds bijectively to the set of irreducible representations of a Weyl group. In this talk, I will discuss how to extend the correspondence to the setting where G is a disconnected complex reductive group and representations/sheaves over a field of arbitrary characteristic. I'll also present illustrative examples and computations, with the help of the CHEVIE package for organizing the relevant data. This is joint work with Simon Riche.