Mautner, Carl; Riche, Simon

Let $G$ be a connected reductive group which is a product of simply connected semisimple groups and a general linear group defined over an algebraically closed field $F$ whose characteristic is very good for all quasi-simple factors of $G$. In this important paper, the authors relate tilting objects in the heart of Bezrukavnikov’s exotic $t$-structure on the derived category of equivariant coherent sheaves on the Springer resolution of $G$, and Iwahori-constructible $F$-parity sheaves on the affine Grassmannian of the Langlands dual group. As applications, they “deduce in particular the missing piece for the proof of the Mirković-Vilonen conjecture in full generality (i.e. for good characteristics), a modular version of an equivalence of categories due to Arkhipov-Bezrukavnikov-Ginzburg, and an extension of this equivalence.” The authors expect that their equivalence will play a big role in the modular representation of connected reductive groups. This expectation has won a major boost from [P. N. Achar and S. Riche, Invent. Math. 214, No. 1, 289–436 (2018; Zbl 1454.20095)].

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14F05 Sheaves, derived categories of sheaves, etc. (MSC2010)
22E57 Geometric Langlands program: representation-theoretic aspects

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