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Motives of twisted flag varieties and representations of Hecke-type algebras.

This is a report on the joint work in progress with N. Semenov, V. Petrov and K. Zainoulline. Motivated by the motivic Galois group approach, we relate the category of cobordism-motives of twisted flag varieties for a linear algebraic group G with the category of integer (or modular) representations of the associated Hecke-type algebra H for G introduced and studied in a series of papers by Calmes, Savage, Zhong and others. In this way, we translate various motivic discrete invariants (e.g. J -invariant of linear algebraic groups), results about indecomposable motives and upper motives (Karpenko-Merkurjev-Vishik), etc, into the language of respective integer/modular representations of H .