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*The "Springer" representation of the DAHA*

Building on the work of Calaque-Enriquez-Etingof, Lyubashenko-Majid, and Arakawa-Suzuki, Jordan constructed a functor from quantum  $D$ -modules on the special linear group to representations of the double affine Hecke algebra (DAHA) in type  $A$ .

In work in progress, our preliminary findings show when we input the so-called quantum Springer sheaf at parameter  $kN$  the output is roughly a  $k$ -thickened version of the regular representation of  $S_N$ . Part of this work is defining what the quantum Springer sheaf is, and through Jordan's functor we gain a greater understanding of its structure. This is joint work with David Jordan.