

On Procesi bundles

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Procesi bundle is a vector bundle on a resolution of a symplectic quotient singularity. It was first constructed by Haiman in the case of a Hilbert scheme of points on the plane who used it to prove the Schur positivity for Macdonald polynomials. In general, such bundles were produced by Bezrukavnikov and Kaledin, they provides a derived McKay equivalence for the resolution. I will basically take the latter for an axiomatic description of a Procesi bundle. I will classify such bundles and their relations to the tautological bundle conjectured by Haiman. The proofs are based on the study of Symplectic reflection algebras.