

NILPOTENT OPERATORS AND STABLE VECTOR BUNDLE CATEGORIES

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This is a report on joint work with Dirk Kussin and Helmut Lenzing. We show a surprising link between singularity theory and the invariant subspace problem of nilpotent operators studied recently by Ringel and Schmidmeier. This link is established via weighted projective lines \mathbb{X} in the sense of Geigle and Lenzing and stable categories of vector bundles on \mathbb{X} .

We establish that the arising categories are triangulated categories with a tilting object. In fact they yield a sequence, parametrized by the nilpotency degree, of triangulated categories which are fractional Calabi-Yau, and are naturally forming an ADE-chain