ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

4. Algebraic Geometry

1991 MS Classification: 14, 16
Meltzer, Hagen, TU Chemnitz, Germany
Exceptional vector bundles
A vector bundle E on a variety X, defined over an algebraically closed field k, is called exceptional if $\mathrm{End}(E) = k$ and $\mathrm{Ext}^i(E, E) = 0$ for $i > 0$. Exceptional bundles have been studied intensively by Drezet, Le Potier, by Rudakov and collaborators for the complex projective plane, and for del Pezzo surfaces.

This talk deals with exceptional vector bundles on weighted projective lines, a class of non-commutative curves modelled by Geigle and Lenzing on a graded commutative sheaf theory. They play an important role in the representation theory of finite-dimensional algebras; the classification of bundles largely depends on the (virtual) genus g of the curves.

We prove that the braid group acts transitively on the set of complete exceptional sequences. We present detailed classification results for the exceptional vector bundles on such curves of so-called "hyperelliptic type".