

**Ohno, Masahiro; Terakawa, Hiroyuki**

**A spectral sequence and nef vector bundles of the first Chern class two on hyperquadrics.**

(English) [Zbl 1408.14133](#)

*Ann. Univ. Ferrara, Sez. VII, Sci. Mat.* 60, No. 2, 397-406 (2014).

**Summary:** We deduce from Bondal's theorem a spectral sequence, which yields a description, such as a resolution, of a coherent sheaf in terms of a full strong exceptional sequence. We then apply the sequence to the case of a vector bundle given with some cohomological data on a projective space; we obtain a resolution of the vector bundle in terms of exceptional line bundles, resolution which is different from that obtained by the Beilinson spectral sequence. Finally we list all known nef vector bundles of the first Chern class two on a hyperquadric of dimension greater than three.

**MSC:**

[14J60](#) Vector bundles on surfaces and higher-dimensional varieties, and their moduli Cited in 4 Documents

[14N30](#) Adjunction problems

[14F05](#) Sheaves, derived categories of sheaves, etc. (MSC2010)

**Keywords:**

[nef vector bundles](#); [hyperquadrics](#); [spectral sequences](#); [exceptional sequences](#)

**Full Text:** [DOI](#)

**References:**

- [1] Assem, I., Simson, D., Skowroński, A.: Elements of the representation theory of associative algebras, vol. 1, London Mathematical Society Student Texts, vol. 65. Cambridge University Press, Cambridge (2006). Techniques of representation theory · [Zbl 0651.18008](#)
- [2] Beilinson, AA, Coherent sheaves on  $\mathbb{P}^n$  and problems in linear algebra, *Funktional. Anal. i Prilozhen.*, 12, 214-216, (1978) · [Zbl 0424.14003](#)
- [3] Bondal, AI, Representations of associative algebras and coherent sheaves, *Izv. Akad. Nauk SSSR Ser. Math.*, 53, 25-44, (1989)
- [4] Bondal, A.I., Kapranov, M.M.: Representable functors, Serre functors, and reconstructions. *Izv. Akad. Nauk SSSR Ser. Math.* **53**(6), 1183-1205, 1337 (1989) · [Zbl 0703.14011](#)
- [5] Huybrechts, D.: Fourier-Mukai Transforms in Algebraic Geometry. Oxford Mathematical Monographs. The Clarendon Press Oxford University Press, Oxford (2006) · [Zbl 1095.14002](#)
- [6] Kapranov, MM, On the derived categories of coherent sheaves on some homogeneous spaces, *Invent. Math.*, 92, 479-508, (1988) · [Zbl 0651.18008](#)
- [7] Ottaviani, G, Spinor bundles on quadrics, *Trans. Am. Math. Soc.*, 307, 301-316, (1988) · [Zbl 0657.14006](#)
- [8] Peternell, T., Szurek, M., Wiśniewski, J.A.: Numerically effective vector bundles with small chern classes. In: Hulek, T.S.M., Peternell, K., Schreyer, F.O. (eds.) *Complex Algebraic Varieties, Proceedings, Bayreuth, 1990*, no. 1507 in *Lecture Notes in Math.*, pp. 145-156. Springer, Berlin (1992)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.