LINE BUNDLES ON NONCOMMUTATIVE ALGEBRAIC VARIETIES

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ABSTRACT. An *order* on an algebraic variety X is a torsion-free coherent sheaf of $\mathcal{O}_X$-algebras whose generic stalk is a central division algebra over the function field of X. An algebraic variety together with an order on it can be thought of as a noncommutative algebraic variety.

We will define line bundles on such noncommutative varieties and show that they possess moduli schemes, which can be thought of as noncommutative analogues of the classical Picard schemes. These schemes have natural compactifications.

We will discuss some longer known and some recent results regarding theses spaces as well as ongoing joint work with N.Hoffmann.

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