Leibniz Universität Hannover

Oberseminar
Institut für Algebraische Geometrie

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A Semi-orthogonal Sequence in the Derived Category of the Hilbert Scheme of Three Points

Given a variety X over a field, the Hilbert scheme $X^{[n]}$ of n points is a fine moduli space parametrizing zero-dimensional subschemes of X having length n. I will recall what is known about $X^{[n]}$ in cases where n or $\dim(X)$ is small and motivate the study of $X^{[3]}$ in arbitrary dimension, especially from a derived category point of view. The main result establishes a collection of semi-orthogonal fully faithful functors from $D^b(X)$ to $D^b(X^{[3]})$, being conjecturally part of an explicit semi-orthogonal decomposition of the bounded derived category $D^b(X^{[3]})$ in terms of the original variety X. The proof leads back to the geometry of the Hilbert scheme, in particular to normal bundle computations on Grassmannian bundles embedded into $X^{[n]}$. If time permits, I will give an intuitive, deformation-theoretic interpretation for the normal bundle descriptions established before.

Donnerstag, 27.06.2024, 16:30 - 17:30, F142.
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Alle Interessierten sind herzlich eingeladen.