



Leibniz
Universität
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Oberseminar

Institut für Algebraische Geometrie

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Equivariant birational geometry of cubic fourfolds

The question which cubic 4-folds X are rational is the leading open question in birational geometry. It has been conjectured that the following are equivalent

- 1) X is rational;
- 2) There exists a K3-surface S such that the Fano variety of lines of $F_1(X)$ is $\text{Hilb}_2(S)$;
- 3) The Kuznetsov component \mathcal{A}_X of the derived category of X is a K3-category.

All known rational cubic 4-folds satisfy conditions 2) and 3). We explore these questions in the category of G -varieties, i.e. varieties with a faithful linear action of a finite group G and G -equivariant morphisms. The notion corresponding the rationality is G -linearizability.

In this talk I will explain the construction of a cubic 4-fold X with a finite group G acting on X that satisfies both conditions above in the category of G -varieties but is still not G -linearizable. (joint work with Yuri Tschinkel and Christian Böhning).

Donnerstag, 23.01.2025, 16:30 - 17:30, B302.

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Alle Interessierten sind herzlich eingeladen.