Leibniz Universität Hannover

Oberseminar
Institut für Algebraische Geometrie

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The $\mathbb{A}^1$-Euler characteristic of the symmetric powers of curves and linear varieties

To any smooth projective scheme over a field which is not of characteristic two, one can assign its $\mathbb{A}^1$-Euler characteristic, which is a quadratic form constructed using motivic homotopy theory. These forms carry a lot of information inside of them and are often used in the fast-growing field of refined enumerative geometry. Work of Arcila-Maya, Bethea, Opie, Wickelgren and Zakharevich extends the $\mathbb{A}^1$-Euler characteristic to all varieties over the base field in characteristic zero. It is in general hard to compute $\mathbb{A}^1$-Euler characteristics, and at the moment, there is no general formula for quotient schemes under a group action. In this talk, I will discuss some recent progress on the case of a symmetric power. I will talk about a joint work with Lukas Bröring, in which we calculate the $\mathbb{A}^1$-Euler characteristic of the symmetric powers of curves using the motivic Gauss-Bonnet Theorem of Levine-Raksit. I will also discuss joint work with Jesse Pajwani and Herman Rohrbach, in which we show that in characteristic zero, one can calculate the symmetric powers of a large class of varieties (which we call "linear varieties") using the power structure which was introduced by Pajwani and Pál.

Donnerstag, 25.04.2024, 16:30 - 17:30, F142.
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Alle Interessierten sind herzlich eingeladen.