



Leibniz
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Oberseminar Institut für Algebraische Geometrie

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The Severi problem for \mathbb{P}^2 .

The Severi varieties $V_{g,d}^{\text{irr}}$ parametrize reduced and irreducible plane curves of fixed geometric genus g and degree d . One of the classical problems concerning $V_{g,d}^{\text{irr}}$, and the motivation for its introduction in the first place, is to show irreducibility. After some introduction to this problem and its history, I will report on recent work with Xiang He and Ilya Tyomkin. We give a new proof that $V_{g,d}^{\text{irr}}$ is irreducible, which in particular needs no assumptions on the characteristic of the base field. The main step of the proof relies on tropical methods and I will explain some of the underlying ideas. Time permitting, I will discuss a few aspects of the problem for other toric surfaces.

Donnerstag, 22.10.2020

16:30 - 17:30, Raum F102

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Alle Interessierten sind herzlich eingeladen.