

BERNOULLIS TAFELRUNDE

GRADUATE STUDENT SEMINAR

Monday, 16 October 2023, 12:15–13:00

Seminarraum 05.002, Spiegelgasse 5

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Singularities of a normal projective cubic surface

ABSTRACT

The classification of complex cubic surfaces in \mathbb{P}^3 by their singularities dates back to the nineteenth century with a modern formulation done in the 1970s. While surfaces of degree one and two are more simple (they have one and two normal forms respectively) cubic surfaces are more varied. The normal singular cubic surfaces alone, which are our focus here, turn out to have 20 different combined singularity types. Our focus here will be on such normal cubic surfaces and we show that the question of classification can be reduced to the intersection of curves in \mathbb{P}^2 . By consecutive blowups we then arrive at a minimal desingularisation of our surface, which allows us to classify the singularities by (maximally) connected sets of (-2) -curves in the desingularisation.