

Algebraic Geometry - Mariusz Koras in memoriam

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ON THE NUMBER OF CUSPS OF RATIONAL CUSPIDAL CURVES

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ABSTRACT. Let $E \subseteq \mathbb{P}^2$ be a complex algebraic curve homeomorphic to a line. Many examples with 1, 2 or 3 cusps are known, often belonging to rather exotic series. But assume that E has at least four cusps. It is conjectured that then the only possibility is that E is a (projectively unique) quintic.

Let (X, D) denote the minimal log resolution of the above curve. We will sketch the proof that the pair $(X, \frac{1}{2}D)$ is almost minimal and we will show how this fact leads to a finite list of possible singularity types of E . The proof of the conjecture should follow soon. This is a continuation of a joint project with Mariusz Koras.