

Tricuspidal curves

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Abstract

Tentative topic for a project in MAT2000 spring 2021. Read the description and please contact me at karoline.moe@ub.uio.no if you are interested in working on one of this topic, or something tangential.

Rational tricuspidal curves and inflection points

A rational algebraic curve in the projective plane is called tricuspidal if it has three cusp singularities. In three articles from the late 1990ies [Fen99; FZ00; FZ96], three series of such curves were constructed, and - more surprisingly - these are the only known such curves. These curves are indeed very special, as they are linked to a rare class of open surfaces.

The main aim of this project is to describe the plane rational tricuspidal curves in terms of special points and invariants. In particular, it is desirable to find and work with defining polynomials and parametrizations for some examples of low degree and study these with [Maple].

References

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