

A tangential trisecant lemma

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Abstract:

As a celebrated result in classical projective geometry, we have

Theorem (trisecant lemma):

For a complex projective curve, if a general secant line is trisecant, then the curve is planar.

By virtue of “trisecant lemma” above, one can show, for instance, that any smooth projective curve is birationally equivalent to a plane curve with at most nodes for singularities.

In this talk, I discuss what one can say if “trisecant line” in the above is replaced by “tangent line”.