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A projection problem
(and a Diophantine equation)

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Let C be an algebraic curve of the complex projective space. We discuss the classical problem of the intersection of C with its tangent lines. The general conjecture, proved by Kaji in the smooth case, is that only a finite number of tangents are trisecant. We present a method that reduces the problem to certain toric curves and then to a Diophantine exponential equation. In this way we generalize the result of Kaji allowing for C some cuspidal singularities. We discuss some related problems for curves and varieties in higher dimensional projective spaces.
The work is a collaboration with Michele Bolognesi.
