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Plane curves with aligned conductors. (English) Zbl 1058.14054
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Summary: An invariant toward a classification of curves X with a birationally very ample and special invertible sheaf L is proposed, and an extremal pair (X, L) by means of the invariant is a smooth plane curve X with $O_X(1)$ corresponding line sections and vice versa. For pairs (X, L) next to extremal ones, all but one exception is characterized by the image $\phi_L(X)$ to be a plane singular curve with aligned conductors. The heart of the paper is to study such a singular plane curve with its normalization involving projective geometry and the theory of adjoint curves.

MSC:

14H50 Plane and space curves

14H45 Special algebraic curves and curves of low genus

14H51 Special divisors on curves (gonality, Brill-Noether theory)

Keywords:

birationally very ample; theory of adjoint curves