

The global geometry of singular sets of rosettes

Michał Zwierzyński

Faculty of Mathematics and Information Science
Warsaw University of Technology

A rosette is a smooth planar closed curve with non-vanishing curvature. We will study the global geometry of affine λ -equidistants, including the Wigner caustic, and the Constant Width Measure Set of rosettes. We will show the isoperimetric-type relations between perimeters and oriented areas of these sets and find some semi-global conditions for existence of singular points of these sets.

References

- W. Domitrz, M. Zwierzyński: "*The geometry of the Wigner caustic and affine equidistants of planar curves*", arXiv:1605.05361v3
- M. Zwierzyński: "*The improved isoperimetric inequality and the Wigner caustic of planar ovals*", J. Math. Anal. Appl., 442(2) (2016), 726 - 739
- M. Zwierzyński: "*The Constant Width Measure Set, The Spherical Measure Set and isoperimetric equalities for planar ovals*", arXiv:1605.02930
- M. Zwierzyński: "*Isoperimetric equalities for rosettes*", arXiv:1605.08304