Oscillatory Integrals and Fractal Dimension

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We study geometrical representation of oscillatory integrals with an analytic phase function and a smooth amplitude with compact support. Geometrical properties of the curves defined by the oscillatory integral depend on the type of a critical point of the phase. We give explicit formulas for the box dimension and the Minkowski content of these curves. Methods include Newton diagrams and the resolution of singularities.

[1] J.-P. Rolin, D. Vlah, V. Županović, *Oscillatory integrals and fractal dimension*, Bull. Sci. math. **168**, 1-31 (2021).

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