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Oscillatory integrals and o-minimality

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We prove the stability under integration and under Fourier transform of a concrete class E of functions, containing all globally subanalytic functions and their complex exponentials. The class E is a system of algebras of which we describe explicitly the generators. The methods of proof pertain to o-minimality (in particular, subanalytic resolution of singularities) and to the theory of almost periodic functions. This provides an example of a fruitful interaction between singularity theory, o-minimality and analysis.

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