

Non-formal deformation quantization

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Some 20 years ago, Maxim Kontsevich [2] prove his formality conjecture, which implies that every Poisson bracket admits a formal deformation quantization. Formality, also yields a classification of the formal deformation quantizations of a given Poisson bracket. The existence of non-formal deformation quantizations is an open problem and in this talk I will describe on-going joint work [1] with Alejandro Cabrera (UFRJ) on this question. We give a precise definition of formal deformation quantization in terms of semi-classical Fourier integral operators and we show that their existence is obstructed.

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References

- [1] A. Cabrera and R.L. Fernandes *Integrability as an obstruction to non-formal deformation quantization*, in preparation.
- [2] M. Kontsevich. *Deformation quantization of Poisson manifolds*. Lett. Math. Phys., **66** (3) (2003) 157–216, 2003.