Introduction to Deformation Quantization

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Abstact

Deformation quantization is a general approach to classical and quantum physics that takes into account the idea that the description of quantum physics should yield the classical description in the limit of Planck's constant $\hbar$ becoming 0. It can be formalized in various ways, e.g. by formal deformation quantization or the deformation of C^*-algebras.

In my talk I am going to discuss the Problem of the harmonic oszillator in classical and quantum mechanics, and show how both versions can be unified with the help of the Wick star product. This then motivates some generalizations, like formal star products on Poisson manifolds or strict star products on locally convex *-algebras.