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Locally noncommutative spacetimes. (English) Zbl 1137.53350

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Summary: A rather new, physically well-motivated notion of locally noncommutative space-times – a refinement of the notion of noncommutative space-times – is reviewed and discussed. It is shown that the latter model can be realized in the framework of formal deformation quantization using star products as well as in the framework of Rieffel’s strict deformation quantization. For the convergent setting Rieffel’s former results for C^* -algebras are generalized to pro- C^* -algebras and applied to actions well-suited to the idea of locally noncommutative space-times.

MSC:

53D55 Deformation quantization, star products

81S10 Geometry and quantization, symplectic methods

Keywords:

strict deformation quantization; pro- C^* -algebras