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Noncommutative field theories from a deformation point of view. (English) [Zbl 1163.53060](#)
Fauser, Bertfried (ed.) et al., Quantum field theory. Competitive models. Papers based on the presentations at the workshop on “Recent developments in quantum field theory”, Leipzig, Germany, July 20–22, 2007. Basel: Birkhäuser (ISBN 978-3-7643-8735-8/hbk). 117-135 (2009).

The author discusses the global geometry of noncommutative field theory from a deformation point of view. The space-times under consideration are deformations of classical space-time manifolds using star products. The matter fields are encoded in deformation quantizations of vector bundles over the classical space-time. For gauge theories, the author establishes a notion of deformation quantization of a principal line bundle and shows how the deformation of associated vector bundles can be obtained.

For the entire collection see [\[Zbl 1153.81002\]](#).

Reviewer: [Benjamin Cahen \(Metz\)](#)

MSC:

- [53D55](#) Deformation quantization, star products
- [58B34](#) Noncommutative geometry (à la Connes)
- [81T75](#) Noncommutative geometry methods in quantum field theory

Keywords:

[noncommutative field theory](#); [deformation quantization](#); [principal bundles](#); [locally noncommutative space-time](#)

Full Text: [arXiv](#)