

Waldmann, S.

Morita equivalence, Picard groupoids and noncommutative field theories. (English)

[Zbl 1078.53083](#)

Carow-Watamura, Ursula (ed.) et al., Quantum field theory and noncommutative geometry. Based on the workshop, Sendai, Japan, November 2002. Berlin: Springer (ISBN 3-540-23900-6/hbk). Lecture Notes in Physics 662, 143-155 (2005).

This paper clarifies the relations between noncommutative field theories and deformation quantization.

An important purpose of noncommutative field theory is to construct physically plausible models for noncommutative space-time. The spaces of noncommutative field theory can be seen as modules over deformed algebras. It is thus useful to understand the relations between the two theories.

In this paper, the author points out some mathematical structures underlying noncommutative field theories. Then, the links with deformed vector bundles and Morita equivalence of star products are studied.

For the entire collection see [[Zbl 1060.58001](#)].

Reviewer: [Angela Gammella \(Creil\)](#)

MSC:

[53D17](#) Poisson manifolds; Poisson groupoids and algebroids

[81T75](#) Noncommutative geometry methods in quantum field theory

Keywords:

[Morita equivalence](#); [noncommutative field theory](#)

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