

**Bucker, Beatrice**

**Geometrical approaches to the quantization of gauge theories.** (English) [Zbl 1072.81053](#)

Mladenov, Ivailo M. (ed.) et al., Proceedings of the 5th international conference on geometry, integrability and quantization, Sts. Constantine and Elena, Bulgaria, June 5–12, 2003. Sofia: Bulgarian Academy of Sciences (ISBN 954-84952-8-7/pbk). 111-130 (2004).

In BRST formalism, one needs a BRST invariant action to quantize a gauge theory. In Batalin-Vilkovisky formalism, a proper solution of classical master equation gives required action. On the other hand, it has been known that all the solutions of a classical master equation forms a  $QP$ -manifold – a kind of supermanifolds. [*M. Alexandrov, M. Kontsevich, A Schwarz and O. Zaboronsky*, Int. J. Mod. Phys. A 12, 1405–1430 (1997; [Zbl 1073.81655](#))].

In this paper, these materials are utilized after a short review. Indeed, a  $QP$ -manifold  $\prod T^*X \times \prod \mathfrak{g} \times \mathfrak{g}$  and the corresponding gauge invariant actions are discussed.

For the entire collection see [[Zbl 1048.53002](#)].

Reviewer: [Hiroshi Tamura \(Kanazawa\)](#)

**MSC:**

[81T70](#) Quantization in field theory; cohomological methods

[81T13](#) Yang-Mills and other gauge theories in quantum field theory

**Keywords:**

[general gauge theory](#); [BRST formalism](#); [supermanifold](#); [master equation](#)

**Full Text:** [EMIS](#)