Wu, Siye

Symmetry, phases and quantisation. (English) Zbl 1381.53163

Mladenov, Ivaïlo M. (ed.) et al., Proceedings of the 18th international conference on geometry, integrability and quantization, Sts. Constantine and Elena (near Varna), Bulgaria, June 3–8, 2016. Sofia: Avangard Prima. Geometry, Integrability and Quantization, 77-96 (2017).

The lectures of this paper are devoted to a fundamental, still open for the general case, problem of geometric quantization: the dependence of the quantum Hilbert space on the choice of some auxiliary data such as polarizations. The way to solve this question in some concrete particular cases is described. A large part of this work, except Sections 5 and 7, is a survey of existing studies on the quantization of linear bosonic and fermionic systems.

For the entire collection see [Zbl 1359.53005].

Reviewer: Mircea Crâşmăreanu (Iaşi)

MSC:

53D50	Geometric quantization
32M15	Hermitian symmetric spaces, bounded symmetric domains, Jordan algebras (complex-analytic aspects)
53D12	Lagrangian submanifolds; Maslov index
81Q70	Differential geometric methods, including holonomy, Berry and Hannay phases, Aharonov-Bohm effect, etc. in quantum theory

Keywords:

anomaly; fermion; geometric phases; geometric quantization; Maslov index; projectively flat connection; spinor representations; symmetry

Full Text: DOI