Slavnov, D. A.
Locality problem in quantum theory. (English. Russian original) Zbl 1145.81314

Summary: We discuss the locality problem in relativistic and nonrelativistic quantum theory. We show that there exists a formulation of quantum theory that, on one hand, preserves the mathematical apparatus of the standard quantum mechanics and, on the other hand, ensures the satisfaction of the locality condition for each individual event including the measurement procedure. As an example, we consider the scattering from two slits.

MSC:
81P15 Quantum measurement theory, state operations, state preparations
81T05 Axiomatic quantum field theory; operator algebras
81P05 General and philosophical questions in quantum theory

Keywords:
locality of measurement; algebra of local observables; double-slit experiment; delayed choice

Full Text: DOI

References:

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