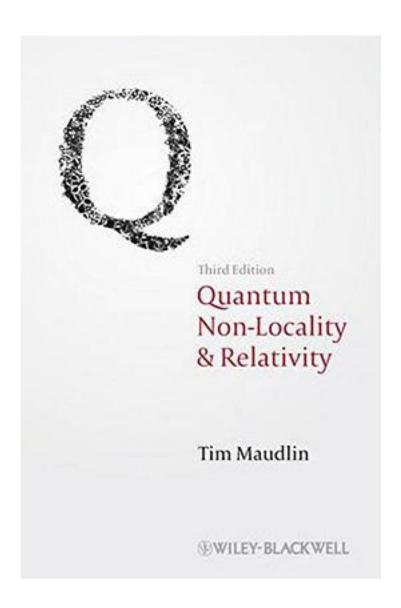
Quantum Non-Locality and Relativity



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Modern physics was born from two great revolutions: relativity and quantum theory. Relativity imposed a locality constraint on physical theories: since nothing can go faster than light, very distant events cannot influence one another. Only in the last few decades has it become clear that quantum theory violates this constraint. The work of J. S. Bell has demonstrated that no local theory can return the predictions of quantum theory. Thus it would seem that the central pillars of modern physics are contradictory. Quantum Non-Locality and Relativity examines the nature and possible resolution of this conflict. Beginning with accurate but non-technical presentations of Bell's work and of Special Relativity, there follows a close examination of different interpretations of relativity and of the sort of locality each demands. The story continues with a brief discussion of the General Theory of Relativity. This second edition also includes a new author's preface and an additional appendix. The book introduces philosophers to the relevant physics and demonstrates how philosophical analysis can help to resolve some of the problems. All of the physics is presented from first principles, and as much as possible is presented pictorially.

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书评

量子力学的非定域性和相对论的定域性是否矛盾是个老问题了。两者虽然不自洽,但至

今却也是在表面上和谐相处。期望更深入的理论和实验探讨。这本书2011年出了第三版了,我觉得问题依旧,认为唯一的共识也许就是"这依然是个问题"。

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