1. Record Nr. UNINA9910134009203321 Autore Adrian Wuthrich (ed.) **Titolo** New Vistas on Old Problems: Recent Approaches to the Foundations of Quantum Mechanics: Proceedings of an International Symposium, Bern, June 23-24, 2011 Edition Open Access, 2013 Pubbl/distr/stampa Descrizione fisica 1 electronic resource (188 p.) Collana Proceedings 3: Max Planck Research Library for the History and Development of Knowledge Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Sommario/riassunto Quantum theory has been a subject of interpretational debates ever since its inception. The Einstein-Podolsky-Rosen paradox, the empirical violation of Bell's inequalities, and recent activities to exploit quantum entanglement for technological innovation only exacerbate a long-standing philosophical debate. Despite no-signaling theorems and theories of decoherence, deep-rooted conflicts between special relativistic principles and observed quantum correlations as well as between definite measurement outcomes and quantum theoretical superpositions persist. This collection of papers, first presented at an international symposium at the University of Bern in 2011, highlights some recent approaches to the old problems of a philosophy of quantum mechanics. The authors address the issues from a variety of perspectives, ranging from variations of causal theory and system theoretic interpretations of the observer to an empirical test of whether entanglement itself can be entangled. The essays demonstrate that the discussion about the foundations of quantum mechanics is as lively and

interesting as ever.