Record Nr. UNINA9910785799503321 Autore Laloe Franck <1940-> Titolo Do we really understand quantum mechanics? // Franck Laloe [[electronic resource]] Cambridge:,: Cambridge University Press,, 2012 Pubbl/distr/stampa **ISBN** 1-316-08998-3 1-139-56471-4 1-283-61066-3 9786613923110 1-139-55117-5 1-139-55613-4 1-139-54992-8 1-139-55488-3 1-139-55243-0 1-139-17716-8 Descrizione fisica 1 online resource (xvi, 392 pages) : digital, PDF file(s) SCI057000 Classificazione Disciplina 530.12 Soggetti Quantum theory Science - Philosophy Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Title from publisher's bibliographic system (viewed on 05 Oct 2015). Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Machine generated contents note: Introduction; 1. Historical perspective; 2. Present situation, remaining conceptual difficulties; 3. The theorem of Einstein, Podolsky and Rosen; 4. Bell theorem; 5. More theorems; 6. Quantum entanglement; 7. Applications of quantum entanglement; 8. Quantum measurement; 9. Experiments, quantum reduction seen in real time; 10. Various interpretations; 11 Annex: basic mathematical tools of quantum mechanics. Sommario/riassunto Quantum mechanics is a very successful theory that has impacted on many areas of physics, from pure theory to applications. However, it is difficult to interpret, and philosophical contradictions and

counterintuitive results are apparent at a fundamental level. In this book, Laloe presents our current understanding of the theory. The

book explores the basic questions and difficulties that arise with the theory of quantum mechanics. It examines the various interpretations that have been proposed, describing and comparing them and discussing their success and difficulties. The book is ideal for researchers in physics and mathematics who want to know more about the problems faced in quantum mechanics but who do not have specialist knowledge in the subject. It will also interest philosophers of science, as well as all scientists who are curious about quantum physics and its peculiarities.