

1. Record Nr.	UNINA9910619454703321
Autore	Rauch H (Helmut)
Titolo	Neutron interferometry : lessons in experimental quantum mechanics, wave-particle duality, and entanglement / / Helmut Rauch and Samuel A. Werner
Pubbl/distr/stampa	Oxford : , : Oxford University Press, , 2015
ISBN	0-19-102125-3 0-19-178081-2
Edizione	[[Second edition].]
Descrizione fisica	1 online resource : illustrations (black and white)
Disciplina	539.7/2130287
Soggetti	Interferometry, Neutron
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Neutron interferometers and apparatus -- Neutron interactions and the coherent scattering lengths -- Coherence and decoherence -- Spinor symmetry and spin superposition -- Topological and geometric phases -- Contextuality and Kochen-Specker phenomena -- Gravitational, inertial, and motional effects -- Solid state physics applications -- Forthcoming, proposed, and more speculative experiments -- Perfect crystal neutron optics -- Interpretational questions and conclusions.
Sommario/riassunto	Quantum mechanics is a part of physics where experiment and theory are inseparably intertwined. This general theme permeates the 2nd edition of this book. It discusses more than 40 neutron interferometry experiments along with their theoretical motivations and explanations. The basic ideas and results of interference experiments related to coherence and decoherence of matter waves and certain post-selection variations, gravitationally induced quantum phase shifts, Berry's geometrical phases, spinor symmetry and spin superposition, and Bell's inequalities are all discussed.