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Sommario/riassunto	This book highlights the findings and achievements in the major research plan “Detection and Interaction of Single Quantum States” funded by the National Natural Science Foundation of China (NSFC). The 8-year plan started in 2011 and consisted of 107 projects conducted by Chinese universities and research institutes. The book covers the plan's research background, achievements, and follow-up prospects. The plan aimed to tackle one of the major challenges for researchers worldwide—to establish precise detection and control of single quantum states in time, space, energy, and momentum. The plan integrated precise detection means with the ultrahigh resolution of time, space, and energy, under extreme conditions such as ultrahigh vacuum, ultralow temperature, high magnetic field, and ultrahigh

pressure, using interdisciplinary research methods in physics, chemistry, informatics, and materials science. The book focuses on the exploration of new phenomena, theories, and concepts of single quantum states, describes new techniques and methods of single quantum states, and presents the purification and construction of single-quantum-state systems. It is a concise and valuable source of information for researchers in quantum science and graduate students interested in the research field.