. Record Nr. Autore Titolo Pubbl/distr/stampa ISBN	UNINA9910778962503321 Schommers W (Wolfram), <1941-> Quantum processes [[electronic resource] /] / Wolfram Schommers Singapore, : World Scientific, 2011 1-283-43324-9 9786613433244 981-279-657-6
Descrizione fisica	1 online resource (420 p.)
Classificazione	UH 8300 UK 2000
Disciplina	539
Soggetti	Quantum theory Space and time
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Foreword; Contents; 1. Conventional Quantum Theory; 1.1. Classical Description; 1.2. Schrodinger's Equations; 1.2.1. Operator Treatment of Schrodinger's Equation; 1.2.2. Momentum Representation; 1.3. Uncertainty Relations; 1.4. Individuals; Remark; 1.5. Conclusion; 1.6. Aspects; 1.6.1. The Principle of Complementarity; 1.6.2. Objectivity; 1.7. Remarks on the Superposition Principle; 1.8. Basic New Experiments; 1.8.1. General Remarks; 1.8.2. Conclusion; 2. Projection Theory; 2.1. Preliminary Remarks; 2.2. The Projection Principle; 2.2.1. The Elements of Space and Time 2.2.2. Relationship between Matter and Space-Time2.2.3. Two Relevant Features; Feature 1; Feature 2; Remarks concerning feature 1; Remarks concerning feature 2; 2.2.4. Two Kinds of "Objects"; 2.2.5. Perception Processes; 2.2.6. Inside World and Outside World; 2.2.7. The Influence of Evolution; 2.2.8. Information in the Picture versus Information in Basic Reality (Outside Reality); 2.2.9. Other Biological Systems; 2.2.10. Summary; 2.3. Projections; 2.3.1. Principal Remarks; 2.3.2. Mach's Principle; 2.3.3. Conclusion; 2.3.4. Other Spaces; 2.3.4.1. Fourier-space 2.3.4.2. The influence of Planck's constant2.3.4.3. Reality and its picture; 2.3.4.4. Remark; 2.3.5. Basic Properties; 2.3.5.1. Operators; 2.3.5.2. Conclusion; 2.3.6. Basic Transformation Effects; 2.3.6.1.

1.

	Particles; 2.3.6.2. Role of time t; 2.3.6.3. Non-local effects; 2.3.6.4. Conclusion; Remark; 2.3.7. Operator Equations; 2.3.7.1. Determination of (r, t) and (p, E); 2.3.7.2. Remarks; 2.3.7.3. Space-specific formulation; 2.3.7.4. Discussion concerning equations (2.35) and (2.50); Comparison with Schrodinger's equation; (r, E)-space representation; 2.3.7.5. Other representations 2.3.7.6. Superposition principleThe general case; Stationary systems; Conclusion; 2.3.8. Processes; 2.3.8.1. General remarks; 2.3.8.2. Description of properties and appearances; 2.3.8.3. The meaning of the wave function; 2.3.8.4. Properties of probability distributions; 2.3.8.5. Does god play dice?; 2.3.9. Time; 2.3.9.1. Reference time and selection processes; Principal remarks; Introduction of the reference system; 2.3.9.2. Structure of reference time; 2.3.9.3. Selections; Convolution integral; Two types of time variables; Rectangular form for the reference time distribution Effect of motion2.3.9.4. Information inside, information outside; 2.3.9.5. Reality outside; 2.3.9.6. Constancy phenomena; 2.3.9.7. Schrodinger's equation and its limitations; Derivation of Schrodinger's equation from the principles of projection theory; Space-time information; Information in connection with usual quantum theory; Summary; 2.3.9.8. Real situation; General remarks; Aspects; 2.3.9.1. Uncertainty relation for time and energy; 2.3.9.12. Time within special theory of relativity; Block universe; Feynman diagrams 2.4. Summary
Sommario/riassunto	Space and time are probably the most important elements in physics. Within the memory of man, all essential things are represented within the frame of space-time pictures. This is obviously the most basic information. What can we say about space and time? It is normally assumed that the space is a container filled with matter and that the time is just that which we measure with our clocks. However, there are some reasons to take another standpoint and to consider this container-conception as unrealistic, as prejudice so to say. Already the philosopher Immanuel Kant pointed on this serious prob