

Interactive Quantum Mechanics

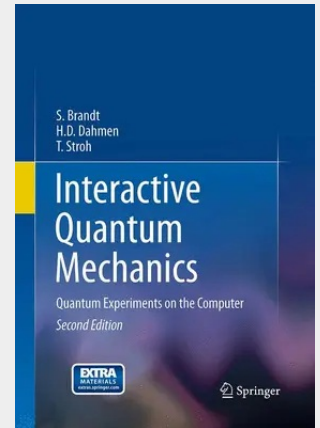
Quantum Experiments on the Computer

Interquanta (IQ), an interactive program on quantum mechanics allows students to do their own quantum physics experiments on the computer, and to study in 3D color graphics such quantities as complex probability amplitude, eigencalues, scattering cross sections, and more. By experiencing many such computer experiments, students gain a unique, "hands-on" experience in quantum physics which is otherwise difficult to achieve. The graphic features include two-and three-dimensional graphics in the form of static frames and motion pictures.

Students do no programming, and hence need no previous detailed knowledge of this. The program has a very convenient, self-explanatory user interface based on the Java software technology. The book provides a recapitulation of the basic quantum mechanical formula, a manual to the IQ program, and a complete course with more than 300 tested problems. Fully automatic demonstration sessions are provided as introduction to interactive work.

Physics topics covered include free particles, bound states and scattering in various potentials in one and three space dimensions, two-particle systems, properties of special functions of mathematical physics.

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