Special Issue

Quantum Mechanics and the Challenge of Time

Message from the Guest Editors

Much progress has been made in the past ten years, both theoretically as well as experimentally, in our understanding of the role of time in quantum mechanics. Yet many questions remain unanswered, such as what is the duration of a quantum transition? Will quantum mechanics speed up or slow down dynamical processes? How does spin symmetry affect transition times? The enigma of energy–time–uncertainty relations has not been fully resolved. Is there a measurable time operator? What is the relation between the time and spatial axes, especially when considering quantum mechanics in the relativistic limit? The purpose of this Special Issue is to provide the reader with new results and a feeling for the role of time in quantum mechanics, a topic which continues to intrigue us all.

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