The Contextual Character of Modal Interpretations of Quantum Mechanics

Domenech, Graciela and Freytes, Hector and de Ronde, Christian (2007) The Contextual Character of Modal Interpretations of Quantum Mechanics.

Full text available as:
Tex/LaTeX - Requires a viewer, such as Tex Live - Windvi on the TeX Live CD-ROM.
PDF - Requires a viewer, such as Adobe Acrobat Reader or other PDF viewer.

Abstract

In this article we discuss the contextual character of quantum mechanics in the framework of modal interpretations. We investigate its historical origin and relate contemporary modal interpretations to those proposed by M. Born and W. Heisenberg. We present then a general characterization of what we consider to be a modal interpretation. Following previous papers in which we have introduced modalities in the Kochen-Specker theorem, we investigate the consequences of these theorems in relation to the modal interpretations of quantum mechanics.