

Dispositions, Relational Properties and the Quantum World

Dorato, Mauro (2003) Dispositions, Relational Properties and the Quantum World.

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Abstract

In this paper I examine the role of dispositional properties in the most frequently discussed interpretations of non-relativistic quantum mechanics. After offering some motivation for this project, I briefly characterize the distinction between non-dispositional and dispositional properties in the context of quantum mechanics by suggesting a necessary condition for dispositionality — namely contextuality — and, consequently, a sufficient condition for non-dispositionality, namely non-contextuality. Having made sure that the distinction is conceptually sound, I then analyze the plausibility of the widespread, monistic ontological thesis about the reducibility of dispositional properties to categorical properties in the context of the philosophy of quantum mechanics. I conclude that with the exception of Bohmian mechanics, the other “ minimally realist” views of quantum mechanics require essential dispositions, i.e., dispositions of a non-reducible kind. Interestingly, seen behind the lenses of dispositionalism, Bohr’ s and Bohm’ s interpretations of quantum mechanics are much closer than it is usually recognized, a fact that could teach us something about the way the quantum world is.

Keywords: Contextualism, Dispositions, quantum mechanics, reduction

Subjects: [Specific Sciences: Physics: Quantum Mechanics](#)

ID Code: 967

Deposited By: [Dorato, Mauro](#)

Deposited On: 12 January 2003