

The Roles of One Thought Experiment in Interpreting Quantum Mechanics. Werner Heisenberg meets Thomas Kuhn.

Van Dyck, Maarten (2003) The Roles of One Thought Experiment in Interpreting Quantum Mechanics. Werner Heisenberg meets Thomas Kuhn..

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Abstract

Recent years saw the rise of an interest in the roles and significance of thought experiments in different areas of human thinking. Heisenberg's gamma ray microscope is no doubt one of the most famous examples of a thought experiment in physics. Nevertheless, this particular thought experiment has not received much detailed attention in the philosophical literature on thought experiments up to date, maybe because of its often claimed inadequacies. In this paper, I try to do two things: to provide an interesting interpretation of the roles played by Heisenberg's gamma ray microscope in interpreting quantum mechanics – partly based on Thomas Kuhn's views on the function of thought experiments – and to contribute to the ongoing discussions on the roles and significance of thought experiments in physics.

Keywords: Heisenberg, gamma ray microscope, quantum mechanics, thought experiment

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ID Code: 1158

Deposited By: [Van Dyck, Maarten](#)

Deposited On: 12 May 2003