

Epistemic and Ontic Quantum Realities

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Abstract

Quantum theory has provoked intense discussions about its interpretation since its pioneer days. One of the few scientists who have been continuously engaged in this development from both physical and philosophical perspectives is Carl Friedrich von Weizsaecker. The questions he posed were and are inspiring for many, including the authors of this contribution. Weizsaecker developed Bohr's view of quantum theory as a theory of knowledge. We show that such an epistemic perspective can be consistently complemented by Einstein's ontically oriented position.

Keywords: ontic and epistemic descriptions, individual and statistical descriptions, quantum measurement, quantum entanglement, realism

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