

# The informational approach to quantum theory: probabilistic theories, quantum principles, and hidden variable models

*Thursday, 21 June 2012 11:30 (30 minutes)*

We will briefly review the operational-probabilistic framework in which quantum theory can be formulated as a theory of information processing. The six principles constituting the axioms that lead to the Hilbert space formalism will be introduced. Relaxing any of these principles opens a wider and largely unexplored scenario, in which alternate theories are allowed. The possibility of interpreting operational probabilistic theories through Hidden Variable models will be discussed, along with the crucial notion of completeness. Finally, we will show a generalization of the EPR paradox that relies on a very restricted set of properties of Quantum Theory, without recurring to its specific algebraic structure.

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