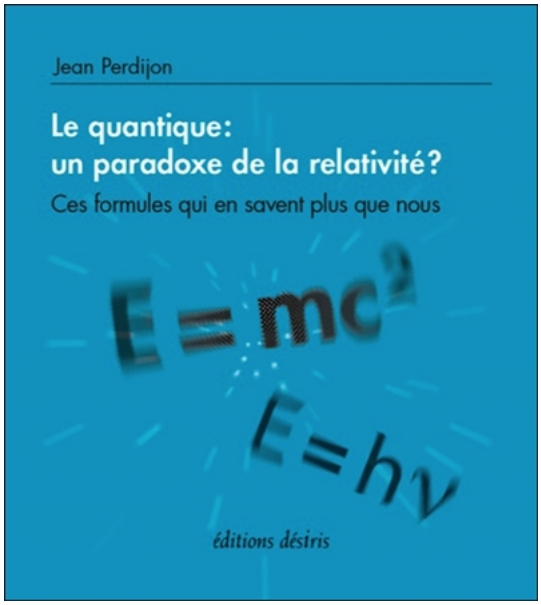

Quantum Physics: A Paradox of Relativity

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How were physicists so critically befuddled that they acknowledged quantum mechanical consequences as illogical as complementarity and non-separability?

Let's go back to 1905, when Einstein formulated the two formulas, E = mc2 and E = hv , that everyone has taken as gospel for a century. The first, which came out of relativity—a realistic and continuous theory that clarified the principles of locality and causality—led to a new interpretation of mass and energy. The second, from quantum mechanics—an operational theory that introduced discontinuity and questioned locality and causality—led to the discretisation of energy and photons. Two opposing conceptions, which string theory is unable to reconcile. Before looking for a super-theory, can't we explain quantum quirks more simply as one of the paradoxes of relativity?

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