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Dejan Stojkovic

Title:

First Part: Beyond Quantum Mechanics - an introduction (by Dejan Stojkovic)

In an attempt to reconstruct quantum mechanics directly from information, with very little or no underlying assumptions, we develop a new formalism in which is based on comparing binary sequences. Correlations (similarities and differences) between two binary sequences can be characterized by numbers, which surprisingly behave exactly like angular momentum quantum numbers (j, m) in QM. They satisfy all the necessary relations, including the rules of angular momentum addition, along with the Clebsch-Gordan coefficients. It is thus possible to rephrase all the crucial features of QM (i.e. probabilities, non-locality and interference) in terms of binary sequences and their correlations.

Second Part: Beyond Quantum Mechanics - experimental tests (by Sam Powers)