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Quantum Theory of the Classical: Einselection, Envariance, and Quantum Darwinism

Monday, 19 September 2022 09:00 (45 minutes)

Core quantum postulates including the superposition principle and the unitarity of evolutions are natural and strikingly simple. I show that - when supplemented with a limited version of predictability (captured in the textbook accounts by the repeatability postulate) - these core postulates can account for all the symptoms of classicality. In particular, both objective classical reality and elusive information about reality arise, via quantum Darwinism, from the quantum substrate.

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