Semicomputability and Nonlocality

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Abstract

This paper introduces the first nonlocal physical properties since EPR entanglement in 1935. Two closed and isolated systems evolving over time anywhere in the universe cannot have algorithmic entropies that are synchronized. In addition, the joint algorithmic entropy of such systems oscillate in a highly controlled fashion. The dynamics need not be computable. The algorithmic entropies of any two computable systems are correlated. There are deep connections between semicomputability and nonlocality. Thus classical physics itself is nonlocal.