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, their joint algorithmic entropy oscillates in a very balanced manner. The dynamics need not be computable. Thus there are deep connections between semicomputability and nonlocality. These results imply classical physics itself is highly nonlocal.