

Abstract Submitted
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Is entanglement signaling really impossible? JACK SARFATTI, Retired — Quantum entanglement cannot be used as a communication channel without an auxiliary light speed limited classical key to unlock the message at the receiver? Hermitian observables guarantee orthogonal sender base states that erase any nonlocal influence of the sender settings on the detection probabilities at the receiver. However, this is no longer true when the entangled whole has different macro-quantum coherent Glauber sender states. Glauber states are non-orthogonal eigenstates of the non-Hermitian photon destruction operator. The Born probability interpretation breaks down because of “phase rigidity” (P.W. Anderson’s “More is different”). This is a new regime that is to orthodox quantum theory what general relativity is to special relativity. Antony Valentini has argued that the breakdown of the Born probability rule entails “signal non locality” (aka entanglement signals). The space-time interval between the sending and the receiving irreversible measurements is irrelevant depending only on the free will of the local observers. That is, this is a pre-metrical topological information effect. There is asymmetry between the sending and the receiving. Therefore, there is no ambiguity between active (retro) cause and passive effect.

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