

## A time-symmetric relativistic model violating Bell's inequality

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### Abstract

Bell's theorem manifests a tension between quantum non-locality and relativity by asserting that any realistic account of EPR-type correlations must admit non-local influences between distant events. We want to explore the possibility to mitigate this tension by admitting microscopic interactions that are both advanced and retarded, thus drawing exclusively on the resources of relativistic space-time. We present a simple toy-model demonstrating that such time-symmetric interactions can account for statistical correlations violating the Bell inequalities while avoiding "conspiracies" as well as the commitment to instantaneous (direct space-like) influences. We discuss how the model fits into the framework of Bell's theorem.

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