

Abstract Submitted  
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**A Local Realistic Reconciliation of the EPR Paradox** BRYAN SANCTUARY, McGill University — The exact violation of Bell's Inequalities is obtained with a local realistic model for spin. The model treats one particle that comprises a quantum ensemble and simulates the EPR data one coincidence at a time as a product state. Such a spin is represented by operators  $\sigma_x, i\sigma_y, \sigma_z$  in its body frame rather than the usual set of  $\sigma_X, \sigma_Y, \sigma_Z$  in the laboratory frame. This model, assumed valid in the absence of a measuring probe, contains both quantum polarizations and coherences. Each carries half the EPR correlation, but only half can be measured using coincidence techniques. The model further predicts the filter angles that maximize the spin correlation in EPR experiments.

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