Devilish Details in EPR-B Analysis

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EPR-B (Einstein,Podolsky,Rosen-Bohm) experiments, nowadays taken to prove the so-called Bell's Theorem, face the following dilemma: The conclusion of this `theoremB4 is that the results of the relevant experiments cannot be understood without a variant
of non-local (instantious and non-classical) coincidence, typically known as ``entanglement.B4B4 At the same time there are numerous (approximately 20) various classical models of the involved phenomena which accurately predict the outcomes. If the current most often accepted significance of Bell's analysis is correct, these classical models must be in error. No-one, however, has even claimed to have found the impugned fatal error. On the other hand, there are various claims that the error is in Bell's analysis. One of this presenter's versions of this claim, for example, is that, quantum effects pertain to variables subject to Heisenberg Uncertainty, namely Hamiltonian conjugates. The variables under investigation in EPR-B [but not EPR] experiments are the two degrees of freedom of the polarization of E&M signals: vertical::horizontal or right::left circular, which are not Hamiltonian conjugates. Therefore in these experiments there is no quantum character to investigate, in particular no entanglement. This presentation will describe work-in-progress involving computer simulations to investigate the reason that thus far there has been no fully satisfactory simulation of EPR-B experiments, as distinguished from parallel classical phenomena. It will be argued that, the reason for this difficulty lies in the fact that the heretofore classical models permit determining signal intensity for every data point or measurement, whereas at the `single photonB4 intensity level the intensity results from the ratio of many detections over the number of possible detections, and the latter quantity can only be estimated.