A Local de-Broglie Bohm interpretation of entanglement
MICHAEL CLOVER, SAIC — We present a local interpretation of the de Broglie-Bohm (pilot wave) trajectory prescription for entangled singlet states of massive particles and show that by using appropriately retarded wavefunctions, this local model will exceed Bell's inequality, making no appeal to any detector inefficiencies. We then analyze a possible experimental configuration appropriate to massive two-particle singlet wavefunctions and find that as long as the particles are not ultra-relativistic, the Dirac wave(s) can propagate from Alice or Bob's changing magnetic field, through space to the other detector before the particle arrives, allowing our local interpretation of the two-particle entangled trajectories. The same analysis suggests a physical mechanism that can actually throw away events and create a detector loophole.

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