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Achieving quantum-like interference in ostensibly "classical" systems through closed timelike curves M.J. RAVE, Western Carolina University
— It was recently shown [1] that quantum interference can be understood heuristically as a quasi-probability effect as opposed to being interference in the traditional sense. Surprisingly, this interpretation requires one to think of closed loops in time (represented by products of probability amplitudes) as fundamental quantum entities, much as we think of state vectors normally. (These entities, incidentally, share similarities to Berry's geometric phase.) The question naturally arises: can this closed-loop paradigm elucidate QI, making its idiosyncracies more mundane? We show that this new way of thinking about QI leads to a whole new class of "classical" systems and analogies that exhibit pseudo-QI effects. [1] M.J. Rave, Found. Phys. 38, 1073 (2008).

Matthew Rave
Western Carolina University

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