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**Intrinsic Versus Extrinsic Which-Way Information and the Use of Extrinsic WW Information in a Delayed Choice Experiment to Send Information Immediately Between 2 Paired Particles** DOUGLAS SNYDER,

None — Intrinsic states characterize a quantity inherent in the particle itself, such as spin. Extrinsic states characterize a quantity that is not in the particle itself but that describes the particle. An example is the specific path a particle is taking through an interferometer. Extrinsic states such as the specific path of a particle can be eliminated before a measurement is made. An experiment is described to show the impact that this ability to eliminate extrinsic states can make. This experiment relies on a delayed choice for an idler photon that immediately affects the signal photon with which it is entangled. The delayed choice concerns whether to maintain or eliminate the entanglement before any measurements are made. The idler photon can essentially be lost before any measurements are made because the states of the idler photon that enters the optical microcavity related to its entanglement are eliminated when the idler photon enters the optical microcavity. One of the reasons is that the states of the idler photon are extrinsic to the particle itself (they characterize the particular path of the particle, a characteristic not inherent to the particle itself) where the information underlying the extrinsic state is eliminated when the particle enters the cavity situated at the confluence of the two possible particle paths. Over a number of runs with this choice, the resulting distribution of the paired signal photons shows interference. If the entanglement is instead maintained, the resulting distribution of the paired signal photons shows ww information.

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None

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