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**Comparing quantum and classical correlations in a quantum eraser** ASHIFI GOGO, WILLIAM D. SNYDER, MARK BECK<sup>1</sup>, Dept. of Physics, Whitman College, Walla Walla, WA 99362. — We have demonstrated the operation of a quantum eraser based on a polarization interferometer. Which-path information is erased not by modifying the interferometer apparatus, but instead by modifying the information obtained from measurements performed on a second beam, whose polarization is correlated with that of the interferometer beam. We compare the results obtained when the two beams are in an entangled state (quantum correlations) and in a mixed state (classical correlations). We find that classical correlations can mimic most, but not all, of the quantum mechanical behavior.

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