

Abstract Submitted
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Correlated-photon experiments for teaching undergraduate quantum mechanics.¹ BRAD MELIUS, ENRIQUE GALVEZ, CHARLES HOLBROW, Colgate University — We have developed a set of undergraduate laboratory experiments with correlated photons that illustrate fundamental quantum mechanical concepts, such as quantum superposition, state projection and entanglement [1]. The experiments use photon pairs produced by parametric down conversion in conjunction with coincidence detection. We report here our work on a new experiment on the Hong-Ou-Mandel dip with entangled states. The goal of the experiment is to demonstrate the bosonic symmetry of the wave function of identical photons [2]. [1] E.J. Galvez et al., Am. J. Phys. 73, 127 (2005). [2] C.H. Holbrow et al., Am. J. Phys. 70, 260 (2002).

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