Implementing Hardy’s Test of Local Realism\textsuperscript{1} ZACHARY CARSON, DAVID JACKSON, BRETTE PEARSON, Dickinson College — We perform a test of local realism based on Hardy’s proposed method and its implementation by Carlson, Olmstead and Beck. The test uses spontaneous parametric downconversion to produce polarization-entangled photon pairs (twins). The twins are sent down spatially separate paths, through polarizing beam splitters, and into one of four channels of a Single Photon Counting Module (SPCM). Correlation rates are then measured in a manner capable of distinguishing between photon behavior predicted by quantum mechanics and that predicted by local realism. Preliminary results will be given.

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