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Quantum Entanglement

The project Quantum Entanglement explores how photons interact with one another and how they produce an interference pattern because of their interaction. We are asking under what combination of polarizers in a Michelson interferometer we can obtain a clear interference pattern. We also measured light intensity to look for evidence of entanglement. We believe that we will be able to find an interference pattern using the Michelson's Interferometer and that we will find the most clear interference pattern with a vertical polarizer in Path A, a horizontal polarizer in Path B and a 45-degree polarizer in the output. We collected data by looking for interference and measuring light intensity at various polarizers settings. We then compared our data to the classic model of light intensity as a function of the polarizers and we finally compared our data to the Quantum Mechanics model, which takes into account the interaction of the photons. In analyzing the data we noticed that we obtained the clearest interference pattern with a vertical polarizer in Path A, a horizontal Polarizer in path B and a 45-degree polarizer in the output and a light intensity of 10.18 lux. However, we are still collecting data so we can create a classic model and compare our model to the classic and the quantum model.