# Photons 1 Abstract

We are presenting a method of testing the violation of Bell inequalities, and hence local realistic theories, using photons. In particular we are focusing on the experimental setup and difficulties in the famous work of Aspect et al., 1981, Phys. Rev. Lett. 49, 91. In this experiment polarization entangled photons coming from electron transitions in a Calcium atom are measured to determine the Bell value for the CHSH inequality. The measured Bell value is 2.697 ± 0.015 which is in great accordance with the quantum mechanical prediction of 2.70 ± 0.05. Furthermore we are discussing possible loopholes that would allow for a local realistic description of nature even though a violation of Bell inequalities is observed.