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The Electron-Photon Coincidence Method and its Application to Excitation of the 2P State of Atomic Hydrogen

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Abstract: Early measurements of atomic excitation by electron scattering observed either the scattered electron or decay photon. An excited state can not be completely defined by such experiments due to loss of information. Therefore a new method was developed in the early 70's called the correlation method. The new correlation method involves the detection of both the scattered electron and photon arising from the same collision using coincidence techniques. This method enables a full description of an excited state. In this paper, we give a discussion of to the method and its application to excitation of the 2p state of atomic hydrogen.

Key Words: Angular Correlation, Electron-Photon Coincidence, Excitation, Electron Scattering.

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