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VUV Study of Electron-Pyrimidine Dissociative Excitation¹

JEFF HEIN, Jet Propulsion Lab, California Institute of Technology, HAJAR AL-KHAZRAJI, COLLIN TIESSEN, DRAGAN LUKIC, JOSHUAH TROCCHI, WILLIAM MCCONKEY, University of Windsor — A crossed electron-gas beam system coupled to a VUV spectrometer has been used to investigate the dissociation of pyrimidine ($C_4H_4N_2$) into excited atomic fragments in the electron-impact energy range from threshold to 375 eV. Data have been made absolute using Lyman- α from H_2 as a secondary standard. The main features in the spectrum are the H Lyman series lines. The emission cross section of Lyman- α is measured to be $(2.44 \pm 0.25) 10^{-18} \text{ cm}^2$ at 100 eV impact energy. The probability of extracting C or N atoms from the ring is shown to be very small. Possible dissociation channels and excitation mechanisms in the parent molecule will be discussed.

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