

Abstract Submitted
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Electron-ion Recombination and Photoionization of P II¹ SULTANA NAHAR, Ohio State Univ - Columbus — Study of the inverse processes of photoionization and electron-ion recombination of P II will be reported. It is a highly reactive ion and has been difficult to detect without detailed information of its interactions. Although a low charged ion, present study shows features in photoionization resulting from relativistic fine structure couplings at low energy region near the ionization threshold of many levels. Unified method under the framework of close coupling approximation and R-matrix method and an extension of Bell and Seaton theory has been used to study the inverse processes. The method gives the level-specific as well as the total recombination rate coefficients which include both the radiative recombination (RR) and dielectronic recombination (DR) in a precise manner. The present results include level specific rates and photoionization cross sections of 475 fine structure levels with $n \leq 10$. Preliminary results on the total recombination rates show considerable interference of RR and DR around 4000 K and a DR peak around 10^5 K.

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