

Abstract Submitted  
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**Resonance Structures in Photoionization of  $S^{+1}$**  SWARAJ TAYAL,  
Clark Atlanta University — Resonance structures in the photoionization of  $S^{+}$  for the removal of a 3p or 3s electron from the ground  $3s^2 3p^3 \ ^4S^o$  and excited metastable  $^2D^o$  and  $^2P^o$  states have been studied in the B-spline R-matrix approach. The non-orthogonal orbitals are used for an accurate description of the  $S^{+}$  initial bound states, the final  $S^{2+}$  ion plus photoelectron states and  $S^{2+}$  ionic thresholds. Calculations have been carried out in 17- and 27-state close-coupling approximations. The relativistic effects have been considered in the Breit- Pauli Hamiltonian. Photoionization cross sections are dominated by  $3s^2 3p^2(^1D)ns \ ^2D$ ,  $3s^2 3p^2(^1D)nd \ ^2F$ ,  $^2D$ ,  $^2P$  and  $3s 3p^3(^5S^o, \ ^3S^o, \ ^3D^o, \ ^3P^o)np \ ^4P$  Rydberg series of resonances. Our results will be compared with merged ion-photon beam experiment.

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