

Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Photoejection with excitation in H^- and other systems A.K. BHATTIA, R.J. DRACHMAN, NASA/Goddard Space Flight Center — Lyman-alpha radiation, 1216Angstrom, has been seen from the sun and from various other sources. This radiation arises from the radiative transition from the $2p \ ^2P$ state to $1s \ ^2S$ state of the hydrogen atom. The 2P state can be excited from the $1s \ ^2S$ state by electron impact. However, it is also possible to produce this excited state by photodetachment of the H^- ion, leaving the H atom in the 2P state. We have calculated cross sections for this process using Hylleraas-type functions for the H^- ion and using the exchange approximation for the photoelectron in the final states of angular momentum equal to 0 and 2. The photoabsorption cross sections in H^- ions and He atoms leaving the hydrogen and helium in 2S are also calculated. Similar calculations have been carried out for the Li^+ , Be^{2+} and C^{4+} ions.

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Date submitted: 23 Dec 2014

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