

Abstract Submitted
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Photoionization of Heavy Atomic Ions CONNOR P. BALLANCE,
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cross sections of heavy atomic elements, in low stages of ionization, are currently
of interest both experimentally and in astrophysics. The data from such processes
have many applications in planetary nebulae, where they are of use in identifying
weak emission lines of n -capture elements. Furthermore, photoionization experi-
ments on heavy atomic ions, at the Advanced Light Source (ALS) in Berkeley, has
highlighted the need to have high quality calculations in order to fully interpret
experimental data. A recently developed relativistic R-matrix code (DARC), for
parallel architectures, has been modified now to include photoionization processes.
We have performed calculations for photoionization cross sections, on a number of
different atomic ion species (Se, Kr, Ar and Xe) in their low stages of ionization,
using both the Breit-Pauli and the relativistic Dirac-R-matrix method. Where pos-
sible, we compare our theoretical results with ongoing experiments being performed
at the ALS. Such comparisons indicate suitable agreement and serve as the ultimate
benchmark for our work. Further details will be presented at the meeting.

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