

# SPARC Topical Workshop 2015



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## Auger electron yields of metastable Li-like projectile states repopulated by radiative cascades and Auger depletion

Content :

In Auger electron measurements of metastable projectile states, where the spectrometer lies at  $0^\circ$  to the ion beam, the overall detection solid angle varies with the electron emission position complicating the determination of the Auger electron yields. Recently, we published on a treatment of this problem based on a Monte Carlo approach utilizing the SIMION package [1]. Here, we extend our treatment to also include the repopulation of such states by radiative transitions from higher  $n$ -states as well as depletion by Auger effects. We make use of theoretical time-dependent results for the  $1s2s2p\ 4,2P$  states populated in 12 MeV  $C^{4+} + He$  collisions and evaluate the  $4P/2P$  ratio of Auger electron yields, whose observed non-statistical production awaits further resolution [2].

[1] S. Doukas et al., Rev. Sci. Instr. 86, 043111 (2015)

[2] T.J.M. Zouros et al., Phys. Rev. A 77, 050701R (2008)

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