Abstract Submitted
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X-ray emission in charge-exchange ion-atom and ion-molecule collisions[1] ANTHONY C.K. LEUNG, TOM KIRCHNER, York University — Charge exchange between highly-charged ions in solar winds and cometary neutrals is the primary process in many observed radiation phenomena in astrophysical environments. The present work examines this process using the two-center basis generator method within the independent electron model. We consider single capture in C^{6+}-He collisions from low to intermediate impact energies and benchmark our results with measurements by Defay *et al.* [1,2]. We also consider single and multiple capture in O^{6+}-Ar collisions, where impact energies more closely resemble solar wind speeds (approximately from 1.17 to 2.33 keV/u). These results are compared with measurements and calculations by Machacek *et al.* [3]. An outlook on collision-induced radiative processes involving ion-molecule collision systems will be given as well. [1] X. Defay *et al.*, Phys. Rev. A **88**, 052702 (2013). [2] A.C.K. Leung and T. Kirchner, Phys. Rev. A **93**, 052710 (2016). [3] J.R. Machacek *et al.*, Astrophys. J. **809**, 75 (2015).

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