Abstract Submitted
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On the role of projectile electrons for target recoil charge state production in intermediate-energy B^{2+}-Ne collisions[1] GERALD SCHENK, MARKO HORBATSCH, TOM KIRCHNER, Department of Physics and Astronomy, York University, Toronto ON M3J1P3, Canada — We consider q-fold target charge state production in 10–600 keV/u B^{2+}- Ne collisions within an independent electron model. The model treats projectile and target electrons on the same footing using the same effective potential forall of them and makes use of a single-determinant wave function for the combined system [1]. Results are compared with recent experimental and theoretical data [2]. We find that the total cross sections for positive ion production as well as Ne^{q+} production ($q = 1, \ldots, 4$) determined in coincidence with unchanged Be^{2+} projectiles agree well with experiment in the 30-400 keV/u energy range. At energies below 200 keV/u the projectile electrons are shown to play a crucial role in order to reproduce the experimental data.

[1] T. Kirchner and M. Horbatsch, Phys. Rev. A **63**, 062718 (2001);
[2] W. Wolff et al, Phys. Rev. A **84**, 042704 (2011).

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