Abstract Submitted
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Bare- and dressed-ion collisions from neon atoms studied within a nonperturbative mean-field approach[1] GERALD SCHENK, TOM KIRCHNER, York University — Motivated by the availability of new experimental data [1] we study electron removal processes in collisions of neon atoms with doubly- and triply-charged bare and dressed ions in the 25 keV/u to 1 MeV/u impact energy regime. The many-electron problem is represented by a single mean field, which in the case of dressed-ion impact includes the projectile electrons. Moreover, the same basis is used to propagate all active orbitals thereby ensuring orthogonality at all times and allowing for a final-state analysis in terms of standard Slater determinantal wave functions. The same approach was used in a recent work for B^{2+}-Ne collisions [2], in which we examined the role of the projectile electrons for target-recoil-charge-state production. The present study expands on that work in several respects: (i) additional collision channels are considered; (ii) time-dependent response is taken into account; (iii) comparisons with equicharged bare ions are carried out in order to shed more light on the role of the (active and passive) projectile electrons.

[1] W. Wolff *et al.*, Phys. Rev. A **84**, 042704 (2011); J. S. Ihani *et al.*, J. Phys. B **46**, 115208 (2013).
[2] G. Schenk *et al.*, Phys. Rev. A **88** 012712 (2013).

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