

Abstract Submitted
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Nonperturbative electron-ion scattering theory incorporating the Møller interaction¹ CHRISTOPHER J. BOSTOCK, DMITRY V. FURSA, IGOR BRAY, Curtin University — Relativistic distorted wave studies by Fontes's et al [*Phys. Rev. A* **47**, 1009 (1993)] demonstrated that the Generalized Breit interaction (equivalently the Møller interaction) can affect electron-impact excitation cross sections of hydrogenlike U^{91+} by more than 50% in comparison to calculations that employ the Coulomb interaction alone. We present the first calculations that investigate the effects of both the Møller interaction and close-coupling in the calculation of electron-impact excitation cross sections [1]. Electron scattering from U^{91+} is used as a test case. The RCCC method is nonperturbative and we emphasise the restrictions and subsequent limitations associated with employing the Møller interaction in the RCCC method.

[1] C. J. Bostock, D. V. Fursa, and I. Bray, *Phys. Rev. A* **86**, 042709 (2012).

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