

Abstract Submitted
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B-spline R-matrix with pseudostates calculations for electron collisions with atomic nitrogen¹ YANG WANG, Harbin Institute of Technology, OLEG ZATSARINNY, Drake University, KLAUS BARTSCHAT, Drake University and ITAMP — The *B*-spline *R*-matrix (BSR) with pseudostates method [1] is employed to treat electron collisions with nitrogen atoms. Predictions for elastic scattering, excitation, and ionization are presented for incident energies between threshold and about 100 eV. The largest scattering model included 690 coupled states, most of which were pseudostates that simulate the effect of the high-lying Rydberg spectrum and, most importantly, the ionization continuum on the results for transitions between the discrete physical states of interest. Similar to our recent work on e-C collisions [2], this effect is particularly strong at “intermediate” incident energies of a few times the ionization threshold. Predictions from a number of collision models will be compared with each other and the very limited information currently available in the literature. Estimates for ionization cross sections will also be provided.

[1] O. Zatsarinny and K. Bartschat, J. Phys. B **46** (2013) 112001.

[2] Y. Wang, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **87** (2013) 012704.

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