Abstract Submitted
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B-spline R-matrix with pseudo-states calculations for electron-impact excitation and ionization of beryllium[1] OLEG ZATSARINNY, KLAUS BARTSCHAT, Drake University — The B-spline R-matrix with Pseudo-States (BSRMPS) method [1,2] is employed to treat electron collisions with beryllium atoms. Results for elastic scattering, excitation, and ionization were obtained for all transitions between the lowest 19 states of beryllium in the energy range from threshold to 150 eV. The sensitivity of the predictions is checked by comparing results obtained in different approximations with increasing number of coupled states. The dataset generated from the largest model, coupling over 600 physical and pseudo-states, is believed to be accurate to within a few percent for the cross sections of relevance for plasma modelling.

[1] O. Zatsarinny, Comp. Phys. Commun. **174** (2006) 273.
[2] O. Zatsarinny and K. Bartschat, J. Phys. B **47** (2014) 061001.

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Klaus Bartschat
Drake University

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