Calculation of positron scattering on the hydrogen negative ion\textsuperscript{1}

DMITRY FURSA, RAVSHANBEK UTAMURATOV, ALISHER KADYROV, IGOR BRAY, Curtin University — Positron collisions with the hydrogen negative ion have been a subject of interest due to exotic nature of the collision system and its role in understanding positron propagation through the interstellar media. This collision system is directly related to the Ps-H scattering problem which provides a testing ground for theoretical studies of Ps interactions with media. Recent development of a coordinate-space method (Utamuratov \textit{et al}, Comput. Phys. Commun. \textbf{239} (2019) 64) to calculate Ps-formation matrix elements has allowed application of the two-center CCC approach to $e^+\text{-}H^-$ scattering. Accurate results have been obtained for Ps-formation, electron detachment and electron-loss cross sections for impact energy range from 0.1 eV to 1 keV.

\textsuperscript{1}This work was supported by Curtin University, the Australian Research Council and the Pawsey Supercomputing Centre.