

Abstract Submitted
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Student Awards Finalist - Time-dependent convergent close-coupling approach to antiproton-impact ionization of molecular hydrogen¹ A.S. KADYROV, I.B. ABDURAKHMANOV, D.V. FURSA, I. BRAY, Curtin University — A time-dependent convergent close-coupling approach to the calculation of \bar{p} -H₂ collisions has been developed and applied to study single ionization. All possible orientations of the molecular target have been accounted for using an analytic orientation-averaging technique. Results for the total single ionisation cross section are compared with experimental data over the energy range of 1 keV to 2 MeV and good agreement is found. The approach provides the first theoretical confirmation of the experimentally observed phenomenon [H. Knudsen *et al.*, Phys. Rev. Lett. 105, 213201 (2010)] of target structure-induced suppression of the ionization cross section for low-energy antiproton-molecular hydrogen collisions.

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