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Regge Oscillations in Ion-Atom collisions S. YU. OVCHINNIKOV, J.H. MACEK, University of Tennessee / ORNL, P.S. KRSTIC, ORNL — Regge oscillations associated with quantum corrections to the integral cross sections computed using the impact parameter method were previously discovered in $H^+ + H$ cross sections [?]. In the present work we argue that these oscillations are a general feature of slow, sub-eV ion-atom collisions. This is illustrated by proton-noble gas elastic cross sections computed using *ab-initio* adiabatic molecular energy curves. A detailed analysis of the H^+ + He collisions is given. This research has been supported by the Chemical Science, Geosciences and Biosciences Division, Office of Basic Energy Science, Office of Science, under Grant No. DE-FG02-02ER15283 and by Offices of Basic Energy and Fusion Energy Sciences, U.S. Department of Energy, through Oak Ridge National Laboratory, managed by UT-Battelle, LLC under contract DE-AC05-00OR22725.

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