

Abstract Submitted  
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**Transport cross sections for proton-noble gases and proton-carbon scattering in the energy range from 0.1 eV to 10 keV<sup>1</sup>** PREDRAG S. KRSTIC, DAVID R. SCHULTZ, Oak Ridge National Laboratory — Using the fully quantum mechanical treatment, elastic differential and integral elastic cross sections have been calculated over a wide range of center-of-mass collision energies, 0.1–10 000 eV, for protons scattered by noble gas atoms He, Ne, Ar, Kr, and Xe as well as carbon atoms. In addition, the momentum transfer and viscosity cross sections, relevant to transport modeling, have been computed from the quantal differential cross sections along with results of the classical trajectory Monte Carlo method. The two complementary sets of results (classical and quantal) for the transport cross sections, enriched with the CTMC charge transfer data, provided deeper insight into the accuracy of the data over the broad energy range. Isotopic scaling relations, derived from the calculations, enable application of the results to the deuterium/tritium rich fusion plasma environment. All data are available through the worldwide website of the Controlled Fusion Atomic Data Center ([www-cfadc.phy.ornl.gov](http://www-cfadc.phy.ornl.gov))[1]. [1] P. S. Krstic and D. R. Schultz, *Physics of Plasmas* **13**, 053501 (2006).

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