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Elastic and transport cross sections for inert gases in a hydrogen plasma[1] PREDRAG KRSTIC, DAVID SCHULTZ, Oak Ridge National Laboratory, Oak Ridge, TN 37831 — Accurate elastic differential and integral scattering and transport cross sections have been computed using a fully quantum-mechanical approach for hydrogen ions (H^+, D^+ and T^+) colliding with Neon, Krypton and Xenon, in the center of mass energy range 0.1 to 200 eV. The momentum transfer and viscosity cross sections have been extended to higher keV collision energies using a classical, three-body scattering method. The results were compared with previously calculated values for Argon and Helium, as well as with simple analytical models. The cross sections, tabulated and available through the world wide web (www-cfadc.phy.ornl.gov) are of significance in fusion plasma modeling, gaseous electronics and other plasma applications.

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