

Abstract Submitted
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Comparisons of sets of electron-neutral scattering cross sections and calculated swarm parameters in Kr and Xe M.C. BORDAGE, G.J.M. HAGELAAR, L.C. PITCHFORD, LAPLACE, CNRS and Univ Toulouse, S.F. BIGLI, Univ Liverpool, V. PUECH, LPGP, CNRS and Univ Paris Sud — Xenon is used in a number of application areas ranging from light sources to x-ray detectors for imaging in medicine, border security and high-energy particle physics. There is a correspondingly large body of data available for electron scattering cross sections and swarm parameters in Xe, whereas data for Kr are more limited. In this communication we show intercomparisons of the cross section sets in Xe and Kr presently available on the LXCat site. Swarm parameters calculated using these cross sections sets are compared with experimental data, also available on the LXCat site. As was found for Ar, diffusion coefficients calculated using these cross section data in a 2-term Boltzmann solver are higher than Monte Carlo results by about 30% over a range of E/N from 1 to 100 Td. We find otherwise good agreement in Xe between 2-term and Monte Carlo results and between measured and calculated values of electron mobility, ionization rates and light emission (dimer) at atmospheric pressure. The available cross section data in Kr yield swarm parameters in agreement with the limited experimental data. The cross section compilations and measured swarm parameters used in this work are available on-line at www.lxcat.laplace.univ-tlse.fr.

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