

Abstract Submitted
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Positron transport in argon M. SUVAKOV, Z. LJ. PETROVIC, Institute of Physics, POB 68, 11080 Zemun, Belgrade, Serbia and Montenegro, S.J. BUCKMAN, Australian National University — We have compiled a complete set of cross sections for positrons in argon based on recent measurements and theory. All aspects of the positron transport differ significantly from that of electrons. The positronium channel leads to a loss of positrons and therefore will be analogous to electron attachment in electron transport. At the same time ionization is treated as an inelastic, conservative process. A Monte Carlo program has been used to calculate positron transport coefficients. The most significant feature is the effect of positronium formation at low E/N . The transport coefficients show a huge effect of non-conservative collisions as the bulk drift velocity becomes almost two orders of magnitude smaller than the flux drift velocity. At higher E/N , however, the two drift velocities have the same order of magnitude.

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