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Transport of Positrons in Arbitrary Configurations of Electric and Magnetic Fields ZORAN PETROVIC, Institute of Physics, University of Belgrade, 11080 Zemun, SASA DUJKO, Institute of Physics, University of Belgrade, 11080 Zemun Serbia, ANA BANKOVIC, Institute of Physics, University of Belgrade, 11080 Zemun, SRDJAN MARJANOVIC, Institute of Physics, University of Belgrade, 11080 Zemun Serbia, RON WHITE, James Cook University of Sothern Queensland Townsville Australia — In realistic geometries in gas filled positron traps electric and magnetic fields may not be always along the same axis or perpendicular. It has been shown for electrons that for arbitrary angles a wide variety of effects may occur. Most importantly controlling the angle may control diffusion and thus affect strongly the losses. We have performed calculations of transport coefficients for molecular hydrogen and carbon-tetra-fluoride. Monte Carlo technique was supplemented by novel development of solution of Boltzmann equation for arbitrary configuration of electric and magnetic fields. Both flux and bulk variants of transport coefficients were considered. It was found that it is possible to control diffusion and hence diffusion losses in a wide range of values by varying the angle of magnetic field. In addition it was found that the configuration will affect the mean energy and hence the losses due to Ps formation. The magnitude of effects depends strongly on shapes of the cross sections for positron scattering.

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