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Positronium Formation from positron impact off hydrogen and helium targets ERIC STACY, T.C. NAGINEY, Department of Physics, Old Dominion University, Norfolk, Virginia, USA, B.B. POLLOCK, Lawrence Livermore National Laboratory, Ca, USA, H.R. WALTERS, Department of Applied Mathematics and Theoretical Physics, The Queen's University, Belfest, BT7 1NN, U.K., COLM T. WHELAN, Department of Physics, Old Dominion University, Norfolk, Virginia, USA and Lawrence Livermore National Laboratory, Ca, USA — Charge exchange cross sections are presented for collisions of positron and protons with hydrogen, neutral and singly ionized helium targets, using a variant of the classical trajectory monte carlo (CTMC) approach. The basic physics of e^+; e^- creation and annihilation is overviewed. It is shown that for atomic hydrogen and helium targets electron capture by a free positron to form Positronium is vastly more probable than inflight annihilation. Good agreement with available experiment is found and the charge cross section for positron of He+ predicted.

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