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Modeling of the trajectories of positrons and electrons in a Time of Flight Positron annihilation induced Auger Electron Spectrometer (TOF-PAES) RANDALL GLADEN, PRASAD JOGLEKAR, ALEX WEISS, Univ of Texas, Arlington — Described herein is a simulation of the trajectories of the positrons in a Time of Flight Positron annihilation induced Auger Electron Spectroscopy (TOF-PAES) system using SIMION. In addition to positrons, the trajectories of the Auger and secondary electrons from the sample to the detector are simulated for a range of energies and emerging angles from the sample. The data collected from the implementation of this simulation will provide a better understanding of the dynamics of the positron beam, as well as the trajectories of the emitted electrons, allowing for greater optimization of the PAES system. Also discussed will be the simulation of proposed future additions to the PAES system, such as cylindrical geometry ExB plates in place of the rectangular geometry plates that are currently in place, and how these will affect the positron beam. The results of these simulations will be considered when constructing future PAES systems.

Randall Gladen
Univ of Texas, Arlington

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