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**Positronium Formation with a Positron Beam and a Carbon Target: A Theoretical Study of Spin Coupling.** SUDHA SWAMINATHAN, Worcester State College, DAVID SCHRADER, Marquette University — A single-collision scattering between a spin-polarized positron beam and a carbon target is considered. The spin coupling between the positron and the triplet ground state of carbon leading to the production of positronium and a carbon ion is studied. Angular momentum coupling and density matrix techniques are then used to predict the probabilities of forming para and ortho positronium when the angle between the polarization vectors of the beam and the target is altered.

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