

Abstract Submitted  
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**Determination of spin alignment in fusion-evaporation reactions with a  $4\pi$  charged-particle detector array**<sup>1</sup> C.J. CHIARA, D.G. SARANTITES, W. REVIOL, R.J. CHARITY, O.L. PECHENAYA, Washington University, A.E. STUCHBERY, Australian National University — It has become fairly standard practice in the analyses of the decays of nuclei produced in fusion-evaporation reactions to measure the angular distributions (ADs) of the emitted gamma rays relative to the beam direction. In such analyses, the dependence on the orientation of the spin vector of the residue is integrated over all directions perpendicular to the beam. Greater sensitivity to the anisotropies of the ADs can be achieved, however, if one can measure these ADs relative to the spin direction on an event-by-event basis. Techniques for determining the spin alignment of residues through the detection of evaporated charged particles will be discussed. Specific examples from data using the Gammasphere and Microball arrays will be shown. Consequences of the segmentation of the charged-particle detector array on such measurements will also be addressed in light of the impact it will have on the development of future auxiliary detectors for Gretina/GRETA.

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