

Abstract Submitted
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Scintillating fiber array for tagging post-bremsstrahlung electrons¹ PHILIP COLE, Idaho State University, STEFAN ALEF, BJÖRN-ERIC REITZ, HARTMUT SCHMIEDEN, JÜRGEN HANNAPPEL, THOMAS JUDE, University of Bonn, PAOLO LEVI SANDRI, INFN - Laboratori Nazionali di Frascati, BGO-OD COLLABORATION — We seek to extract the kinematic fingerprints of baryon resonances by making use of a high-quality beam of linearly polarized photons at the BGO-OD experiment at ELSA (Bonn, German). We constructed a unique device for precisely determining the degree of polarization in the coherent bremsstrahlung peak. Deflection of post-bremsstrahlung electrons in the magnetic field of the photon tagger provides precise information on the energy and polarization of the bremsstrahlung photons. And thereby will constrain the overall kinematics of the final-state particles in all decay channels of the photoproduced baryon resonances. We designed, prototyped, built, calibrated, and have been operating a three-layered, multi-stranded, scintillating-fiber detector for ensuring the quality of the linearly polarization of the photon beam. The overlapping 2.00-mm scintillating fibers form an array giving ARGUS over 500 channels. The very befitting name harkens to the mythological all-seeing creature Argus Panoptes, the multi-eyed giant. Our work was supported through a Fulbright Scholarship Award and by the Deutsche Forschungsgemeinschaft through the Collaborative Research Center (Sonderforschungsbereich SFB/TR-16) of the universities in Bonn, Giessen and Bochum, Germany.

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