

Abstract Submitted
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Test Beam Results for a Spectator Reaction Plane Detector for Use at the CERN LHC¹ SAMUEL LASCIO, ALICE MIGNEREY, University of Maryland, College Park, JZCAP TEAM² — The ability to determine the reaction plane of a heavy ion collision using spectator neutrons is key to the study of directed flow and the chiral magnetic effect (CME) in these reactions. A shower max detector, the Spectator Reaction Plane Detector (SRPD) has been developed to map spectator neutron positions at zero degrees. The SRPD is comprised of a 4 x 4 array of 2 x 2 x 1 cm quartz elements. In this specific design the SRPD is positioned between two elements of a Zero Degree Calorimeter (ZDC). The detector performance was evaluated using a Pb beam at the SPS test beam facility at CERN. The results will be compared to a GEANT simulation of the detector for the specific test beam parameters, with implications for the design of a second generation detector for incorporation into a new ZDC for the CERN LHC Run 3.

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²A team created to produce a unified proposal for a ZDC for CMS and ATLAS for the LHC Run 3 upgrade.

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