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Alternative RPC Coatings JASON STRACK, University of Illinois Urbana Champaign, PHENIX COLLABORATION, UNIVERSITY OF ILLINOIS AT URBANA CHAMPAIGN TEAM — The nuclear physics group at the University of Illinois is currently developing techniques to further improve the performance of Bakelite Resistive Plate Chambers (RPCs) for use as muon trigger detectors in experiments at hadron colliders. Muon trigger RPCs at LHC and RHIC typically use Bakelite plates coated with linseed oil. Both Bakelite and linseed oil, however, have high bulk and surface resistivity thus limiting the detection efficiency of the RPC at high rates. Experiments which dope the linseed oil with either carbon or copper are carried out with the goal to select targeted lower surface resistivity values for the coating applied to the Bakelite plates. Two doping procedures have been studied. In the first method a thin layer of graphite is deposited between the Bakelite and the linseed oil. For the second method the graphite or copper powder are deposited on top of the drying linseed oil coating. In this presentation the coating methods will be discussed and the effects of the coating on the RPC position resolution, cluster size and efficiencies will be discussed.

Jason Strack
University of Illinois Urbana Champaign

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