Abstract Submitted
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Neutron Flow at the Large Hadron Collidor[1] JESSICA SNYDER, University of Kansas, CMS COLLABORATION — One of the most exciting recent results in high-energy nuclear physics is the discovery that nucleus-nucleus collisions at the Relativistic Heavy Ion Collider, RHIC, produce an almost perfect fluid of quarks and gluons. This state was identified thanks to the strong collective "flow" of particles observed. In 2009 the Large Hadron Collider, LHC, will study lead-lead colllisions at an energy 28 times larger. At such high energies, it is possible that the collective properties of the produced matter resemble more that of a weakly interacting quark-gluon gas rather than the liquid-like state observed at RHIC. This would result in a different flow strength. Flow measurements at the LHC can be carried out by measuring the pattern of spectator neutrons emitted along the beam axis, using two detectors inserted between the electromagnetic and hadronic sections of the CMS Zero Degree Calorimeters (ZDCs). I will present results of GEANT simulations of such a detector, including estimates of its capabilities to measure neutron flow.

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