

Diamond Sensors for Energy Frontier Experiments

Steve Schnetzer

*for the RD42 Collaboration **

Rutgers University

E-mail: steves@physics.rutgers.edu

We discuss the use of diamond sensors in high-energy, high-intensity collider experiments. Results from diamond sensor based beam conditions monitors in the ATLAS and CMS experiments at the CERN Large Hadron Collider (LHC) are presented and plans for diamond based luminosity monitors for the upcoming LHC run are described. We describe recent measurements on single crystal diamond sensors that indicate a polarization effect that causes a reduction of charge collection efficiency as a function of particle flux. We conclude by describing new developments on the promising technology of 3-D diamond sensors.

22nd International Workshop on Vertex Detectors

September 15th-20th, 2013

Lake Starnberg, Germany

*See final page for RD42 author list.