

School of Physics Seminar

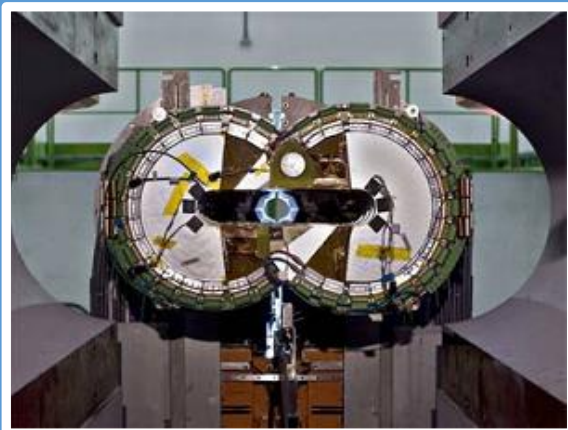


Dr Nicola Minafra

Department of Physics and Astronomy,
University of Kansas, USA

Wednesday 08/11/17 at 4pm in SCN room 128

Fast solid state detectors for particle physics, astrophysics and medicine



Semiconductor devices are widely used in physics measurements, primarily to measure ionising radiation, but they also have sensitivity to photons. Large arrays of semiconductors are used to measure charge particles at the LHC with a typical spatial resolution of 5 microns and a response time of 20 nanoseconds. However, detecting proton collisions within the colliding bunches requires picosecond resolution. After reviewing semiconductor devices, I will describe recent advances in detector technology and readout electronics that have allowed us achieve a time precision of 40ps. An application of this technology is the visualisation of individual photons and electrons in medical LINACs. I will describe the test setup and first results from our collaboration with UCD and St. Luke's hospital.

All Welcome!