Contribution ID: **73**   Type: **not specified**

The Pixel-TPC: first results from an 8-InGrid module

Wednesday, 3 July 2013 09:40 (25 minutes)

Micromegas detectors have intrinsically a high granularity that is given by the distance between the holes in the mesh. To reflect this from the readout side an ASIC, the Timepix chip, with a pixel pitch of 55μm is used in our experiments. In the past a production process using photolithography was developed at the University of Twente on single chip basis. In this process the holes of the mesh are aligned with the pixels and an integrated grid is build on the chip (InGrid). To produce larger quantities of InGrids the process was transferred to a wafer based production at IZM Berlin. For evaluation, the InGrids were tested in our laboratory using a radioactive iron source. Gas amplification, response uniformity, energy resolution and single electron detection efficiency were investigated. Larger scale detectors with many pixel chips especially in a TPC environment require a new readout system. We have adapted the Scalable Readout System (SRS) to handle the Timepix chip. FPGA code as well as electronics are developed with the goal to construct at scalable system that can handle 96 chips. A board carrying eight InGrids was constructed and mounted on a module for the large prototype of the LCTPC collaboration at DESY. In a two week test beam at DESY in March and April we tested the new SRS based readout system together with the module. First results including data with magnetic field are presented.

Presenter: LUPBERGER, Michael (Universitaet Bonn (DE))

Session Classification: Wednesday (MPGD morning session)