



Contribution ID: 65

Type: Poster

Particle identification using the time-over-threshold measurements in straw tube detectors

Friday, 25 May 2012 18:41 (0 minutes)

In the PANDA experiment, identification of charged particles in momentum region below about 1 GeV/c will be based on the measurement of energy losses in the central straw tube tracker. In order to make a choice between the charge integration and the time-over-threshold (TOT) techniques for the energy loss measurement, we performed tests of a prototype straw detector read out with a new front-end ASIC equipped with both analog and digital output. A very good performance of the TOT in a wide range of energy losses was observed. Results of tests agree with GARFIELD simulations of the straw tube response convoluted with transfer function for the front-end electronics. In the present contribution, the prototype module containing pressure stabilized straw tubes and the architecture of the front-end ASIC will be described and the results of the TOT measurements and simulations will be presented.

Primary author: JOWZAE, Sedigheh (Institute of Physics, Jagiellonian University, Krakow, Poland)

Co-authors: PRZYBOROWSKI, Dominik (AGH, University of Science and Technology, Krakow, Poland); FIORAVANTI, Elisa (University of Ferrara, Ferrara, Italy); KORCYL, Grzegorz (Institute of Physics, Jagiellonian University, Krakow, Poland); RITMAN, James (Institute of Nuclear Physics, Research Center Juelich, Juelich, Germany); SMYRSKI, Jerzy (Institute of Physics, Jagiellonian University, Krakow, Poland); PYSZ, Krzysztof (Institute of Nuclear Physics, Polish Academy of Science, Krakow, Poland); IDZIK, Marek (AGH, University of Science and Technology, Krakow, Poland); PALKA, Marek (Institute of Physics, Jagiellonian University, Krakow, Poland); SAVRIE, Mauro (University of Ferrara, Ferrara, Italy); GIANOTTI, Paola (INFN National Laboratories of Frascati, Frascati, Italy); STRZEMPEK, Pawel (Institute of Physics, Jagiellonian University, Krakow, Poland); WINTZ, Peter (Institute of Nuclear Physics, Research Center Juelich, Juelich, Germany); SALABURA, Piotr (Institute of Physics, Jagiellonian University, Krakow, Poland); KRZEMIEN, Wojciech (Institute of Physics, Jagiellonian University, Krakow, Poland)

Presenter: JOWZAE, Sedigheh (Institute of Physics, Jagiellonian University, Krakow, Poland)

Session Classification: PID and Photo Detectors - Poster Session

Track Classification: P3 - PID and Photo Detectors