



Abstract ID : 29

Status of Day-1 experiment at HESR

Abstract content

The conceptual design of the luminosity monitor for the PANDA experiment is based on measuring the differential elastic antiproton-proton scattering rate by 4 planes of HV-MAPS (High-Voltage Monolithic Active Pixel Sensors) tracking detectors. The absolute precision is limited by the lack of existing data in the relevant momentum region. Therefore, the Day-1 experiment at HESR will measure antiproton-proton elastic scattering with high precision over a wide range of 4-momentum transfer ($t = 0.0008-0.1 \text{ GeV}^2$) that the contribution of the physical differential distributions to the absolute luminosity uncertainty is less than 1%. The polar angle of scattered antiprotons and the energy of recoil protons will be measured by tracking detectors at forward angles and by thick energy detectors near 90° , respectively. In order to test the method proposed for the Day-1 experiment one of the recoil arms has been designed and built. The recoil arm has been commissioned at COSY (Cooler Synchrotron in Juelich) by measuring proton-proton elastic scattering. The preliminary results of the commissioning will be presented.

Summary

Primary author(s) : Dr. XU, Huagen (Forschungszentrum Juelich, IKP)

Presenter(s) : Dr. XU, Huagen (Forschungszentrum Juelich, IKP)

Contribution Type : Talk

Comments:

This talk is for the PANDA collaboration and will be given in the session of FAIR Workshop.

Submitted by **XU, Huagen** on **Friday 16 May 2014**