



Contribution ID: 89

Type: **Poster presentation**

A Small Data Acquisition System for the KOALA Experiment in Juelich

Friday, June 10, 2016 10:30 AM (1h 35m)

KOALA will be an independent experiment at HESR (Darmstadt) to measure antiproton-proton elastic scattering in order to gain the differential cross section which is a crucial input for the PANDA luminosity determination. The KOALA experiment will measure the elastically scattered beam particles in forward area and recoil protons from the target near 90 degrees. One of the recoil detectors has been designed and built. It was installed and commissioned by measuring proton-proton elastic scattering at COSY in Juelich.

The data acquisition system is currently running with a small amount of channels (240 ADC, TDC and scaler channels, plus trigger and synchronisation logic) with some interesting features. The hardware and the software concept will be shown. Especially some problems with the synchronisation and their solutions will be discussed.

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Session Classification: Poster Session 2

Track Classification: Data Acquisition