



Contribution ID: 22

Type: **Talk**

Measurements with a Si-strip telescope

Thursday, 7 July 2011 12:10 (20 minutes)

A tracking station composed of silicon strip sensors has been designed, built and tested. It is a beam telescope equipped with four boxes containing single-sided and double-sided silicon strip sensors. The boxes can be moved along the longitudinal direction and one module can be rotated changing the incident angle of the beam. These features allow studying in detail the effects of changes in the setup on energy loss, cluster size and resolution.

The tracking station has been used with particle beams at different facilities (COSY, DESY, ELSA).

A selection of scatterers has been placed in the center of the station, allowing the measurement of deflection angle distributions. This allows a validation of hadron physics simulation tools in the low energy range, where the previous input from measurements was incongruently described.

Furthermore, light materials such as carbon foams with different densities and compositions were characterized during these tests.

The construction of the tracking station included the realization of a DAQ chain, with fast online data processing performed with FPGA based devices.

On- and offline analyses will be compared and the simulations will be discussed on the background of the data.

Supported by BMBF and BCGS

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Session Classification: DAY 2