



Contribution ID: 347

Type: Oral

An EUDET/AIDA Pixel Beam Telescope for Detector Development

Thursday, 5 June 2014 11:40 (20 minutes)

A high resolution ($\sigma \sim 2\mu\text{m}$) beam telescope based on monolithic active pixel sensors (MAPS) was developed within the EUDET collaboration. The telescope consists of six monolithic active pixel sensor planes (Mimosa26) with a pixel pitch of $18.4\ \mu\text{m}$ and thinned down to $50\ \mu\text{m}$. The excellent resolution, readout rate and DAQ integration capabilities made the telescope a primary test beam tool for many groups including several CERN based experiments.

Within the European detector infrastructure project AIDA the test beam telescope is being further extended in terms of cooling and powering infrastructure, read-out speed, area of acceptance, and precision. In order to provide a system optimized for the different requirements by the user community a combination of various state-of-the-art pixel technologies is foreseen. Furthermore, new central dead-time-free trigger logic unit (TLU) has been developed to provide LHC-speed response with one-trigger-per-particle operating mode and a synchronous clock for all connected devices. In this report, the design and current development status of this even more flexible telescope with three different pixel technologies (TimePix, Mimosa, ATLAS FE-I4) will be presented.

Primary authors: PERREY, Hanno (Deutsches Elektronen-Synchrotron (DE)); RUBINSKIY, Igor (Deutsches Elektronen-Synchrotron (DESY)-Unknown-Unknown)

Presenter: RUBINSKIY, Igor (Deutsches Elektronen-Synchrotron (DESY)-Unknown-Unknown)

Session Classification: II.a Experiments & Upgrades

Track Classification: Experiments: 2a) Experiments & Upgrades