Calibration of Analog Sensors for the Alignment of Muon Chambers in the CMS experiment

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Compact Muon Solenoid

CMS Muon Endcap System









Wire extension potentiometer



Linear motion potentiometer

Example : Disk ME2

Calibration Bench

Absolute Distance

Calibration Bench

The Analog system

Lab View - Virtual Instrument Interface

Virtual Instruments

- Move the stepper motor using :

direction of the stepper motor

- Take simple measurements with DAQ :

HP34970A Single PointMARION.vi

Cross calibration

Cross Calibration

Response of R sensor vs distance over 10 cm of wire extension

Summary and Future project

 During each calibration, the input voltage applied on the Analog interface will be recorded with the sensor response.

 For mid August, florida Tech has to calibrated all sensors for ME2 and shipped to CERN.