

Overview of the 2013 Micromegas test beam run

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Data taking preparation

Initial plans followed and even surpassed

January 28 : Arrival

January 29 : final HV and DAQ test and mounting of the modules. Cosmic-ray trigger setting up.

January 30 : mounting and testing of HV filtering. Noise reduction studies, HV check and setup. Start gas circulation.

January 31 : Alignment/centering of the TPC. Cosmic data taking. Tuning of the t0.

February 1,2 : drift velocity measurement at nominal fields. Rotation to beam position and accurate alignment in phi. Tests of the moving stage.

Feb 3: Z scans at 2 nominal fields (2 ω .tau conditions)

Feb 4: Phi scan, gain studies

Feb 5: data at 2 GeV, momentum resolution studies. Crack scans

Feb 6: Data with 1 module HV=0, data at B=0. Z scan.

Feb 7: Morning: Drift velocity vs E field. Afternoon: dismounting and packing

Feb 8: Travel back.

About 1 Million events taken so far.

12000 channels (all connected but 10 per module at the beginning. Unfortunately losing connections)

Perfectly smooth DAQ (14 Hz) and Micromegas operation (6-7 nA total)

Z scans at $B=0$ and $B=1T$, drift fields of 140 and 230 V/cm

Phi scan $0^\circ, 5^\circ, 10^\circ, 15^\circ, 20^\circ, 45^\circ$ at $z=5\text{cm}$ and 15cm , $B=0$ and $1T$

Mesh HV scan from 330 V to 410 V (nominal 380 V).

Momentum scan 1,2,3,4,5 GeV, drift fields of 140 and 230 V/cm

Various beam positions for module alignment

All data at 100 ns shaping time so far









