

Test of a prototype Microstrip Silicon Detector for the FOOT experiment

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The FOOT (FragmentatiOn Of Target) experiment aims to measure the fragmentation cross-section of protons into H, C, O targets at beam energies of interest for hadrontherapy (50–250 MeV for H and 50–400 MeV/u for C ions).

Given the short range of the fragments, an inverse kinematic approach requiring precise tracking capabilities in a magnetic volume has been chosen.

A key subsystem of this experiment will be the Microstrip Silicon Detector, based on 150 um thick single side microstrip sensors. In this work, we present the results of characterization of the new version of a 64 channel low-noise/low power high dynamic range readout ASIC and subsequent tests of the first 150 um thick sensor prototype.

A series of tests were also performed to validate a novel “grazing angle” approach, where it is possible to change the track length below a given strip varying the incoming particle’s incident angle onto the sensor to test the electronics dynamic range without using high Z ions.

TIPP2020 abstract resubmission?

Yes, this would have been presented at TIPP2020.

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