

## Beam test results for the RAPS03 non-epitaxial CMOS Active Pixel Sensor.

In recent works our group has investigated the possibility of using a standard CMOS technology - featuring no epitaxial layer - to fabricate a sensor for charged particle detection.

In this work we present the results obtained exposing sensors with 256x256 pixels (10 x 10 micron pixel size, two different photodiode configurations) either to 500 MeV electron beam at the Beam Test Facility (LNF - Frascati) than to 12 GeV Protons at the ProtoSynchrotron facility (CERN).

We have investigated the different response of the two architectural options in terms of S/N, cluster width, intrinsic spatial resolution, efficiency. The results show a good Landau response, S/N about 22 with an average cluster size of 4.5 pixels, and an intrinsic spatial resolution of 1.5 micrometers (order of 1/10th of the pixel size).

**Summary (Additional text describing your work. Can be pasted here or give an URL to a PDF document):**

[http://cms.pg.infn.it/~servoli/RAPS03\\_summary.pdf](http://cms.pg.infn.it/~servoli/RAPS03_summary.pdf)

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