CMS HPK Sensor characterization

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During the high luminosity phase of the LHC (HL-LHC, starting around 2020) the inner tracking system of CMS will be exposed to much more severe conditions than the current system was designed for. Therefore a new Tracker will be built to cope with higher radiation levels and higher occupancies.
Within the strip sensor developments of CMS a comparative survey of silicon materials and technologies is being performed in order to identify the baseline material for the future Tracker. For this, a variety of materials (float-zone, magnetic Czochralski and epitaxially grown silicon with thicknesses from 50µm to 320µm æs p- and n-type) have been processed at one company (Hamamatsu Photonics) and are irradiated (proton, neutron and mixed irradiations up to 1.5e15n_{eq}/cm² and beyond) and tested under identical condition. The wafer layout includes a variety of devices to investigate different aspects of the sensor properties like simple diodes, test-structures, small strip sensors and a strip sensor array with varying strip pitch and strip width.
This talk will present the current status and results of this campaign.