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Prototypes and system test stands for the Phase 1 upgrade of the CMS pixel detector

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The present CMS pixel detector will be replaced in the extended end of year shutdown between 2016 and 2017 with a new detector that will feature one additional tracking layer, faster readout electronics to cope with the increase in instantaneous luminosity, and a new CO2 cooling system that will help avoiding increases in the total material in the tracker. This presentation will focus on the ancillary electronics that supports the readout of the pixel detector, and on the lessons learned from system test facilities and from a prototype (pilot detector) that is currently installed in CMS. Both the system test facilities and the pilot detector employ preproduction components of the final detector. In addition to allowing tests of the full readout chain the test facilities allow for the development of the data acquisition and of all the calibration programs. With time these test facilities will evolve into test stands where the entire system will be read out and calibrated prior to the installation in CMS. Results from both the pilot detector and from the system test facilities will be presented.

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Session Classification: After dinner POSTER session, with drinks: (All presenters are requested/encouraged to attend their posters; All participants are requested to participate the session, with drinks!)

Track Classification: Applications in High Energy Physics