

Performance and Plans for the Silicon Pixel Detector of the STAR Experiment at RHIC

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The Heavy Flavor Tracker (HFT¹) is a silicon detector for the STAR experiment at RHIC that uses ultra thin sensors (50 microns) with 20x20 microns active pixel (MAPS) technology for the inner two layers. The air-cooled lightweight pixel detector is surrounded by two conventional silicon pad and strip layers to interface to the Time Projection Chamber (TPC) tracks and it is coupled to a smaller diameter and thinner beam pipe in order to minimize scattering and extrapolation lever arm. The full system is capable of a track pointing (DCA) resolution of about ~30 microns for 1 GeV/c pions. In Spring-2014 the HFT system had its first physics run with Au+Au collisions at 200 GeV/c. In this talk we will report on its overall performance, calibrations and tracking efforts, on lessons learned, plus the plan to 'upgrade' the pixel part.

1. STAR Heavy Flavor Tracker Technical Design Report, <https://drupal.star.bnl.gov/STAR/starnotes/public/sn0600>