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Performance of a Single-Crystal Diamond-Pixel Telescope DMITRY HITS, STEVE SCHNETZER, ROBERT STONE, ED BARTZ, JOHN DOROSHENKO, Rutgers University, VALERIE HALYO, BERT HARROP, ADAM HUNT, DAN MARLOW, Princeton University, WILL JOHNS, Vanderbuilt University, WILLIAM BUGG, MATT HOLLINGSWORTH, STEFAN SPANIER, University of Tennessee, RICHARD HALL-WILTON, VLADIMIR RYJOV, CERN, MANFRED PERNICKA, HEPHY Vienna, CMS COLLABORATION — We will present the results of a test beam study of a single-crystal, diamond, pixel telescope. This telescope is a prototype for a dedicated luminosity monitor for CMS. The telescope has three equally-spaced planes with a total length of 7.5 cm. Each plane consists of a single-crystal CVD diamond with an active area of 4mm $\times$ 4mm bump-bonded to a PSI46v2 pixel readout chip. The study was carried out in a high energy pion beam at the CERN SPS. We will present results on the performance of the telescope including occupancy, efficiency, pulse height distributions and tracking.

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