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High Voltage Monolithic Active Pixel Sensors for the PANDA Luminosity Detector (PANDA)

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The PANDA-Experiment will be part of the new FAIR accelerator center at Darmstadt, Germany. It is a fixed target experiment using an antiproton beam with very high resolution for precision measurements. For a variety of measurements like energy-scans the precise determination of the luminosity is needed. The luminosity detector will determine the luminosity by measuring the angular distribution of elastically scattered antiprotons very close to the beam axis (3-8 mrad). To reconstruct antiproton tracks four layers of thinned silicon sensors with smart pixel readout on chip (HV-MAPS) will be used. Those sensors are currently under development by the university of Heidelberg. In the talk the concept of the luminosity measurement is shortly introduced before a summary of the status of HV-MAPS prototypes and readout electronics is given.

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