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## PANDA Straw Tube Detectors and Readout

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PANDA is a detector under construction dedicated to studies of production and interaction of particles in the charmonium mass range using antiproton beams in the momentum range 1.5 –15 GeV/c which will be available at the Facility for Antiproton and Ion Research in Darmstadt. PANDA consists of two spectrometers –the Target Spectrometer based on a superconducting solenoid and a Forward Spectrometer using large dipole magnets and covering the most forward scattering angles ( $\Theta < 10^\circ$ ). In both spectrometers, the deflection of particles trajectories in the magnetic field is measured using self-supporting straw tube detectors. The expected high count rates reaching up to 1 MHz are one of the main challenges for the straw tubes and associated read out electronics. In the talk, the design of the tracking system and the results of a test of the prototype straw tube tracker equipped with a read out chain will be presented. The latter consist of a newly developed ASIC with amplification, signal shaping, tail cancellation, discriminator stages and digital boards -Time ReadOut Boards- with a TDC implementation based on an FPGA featuring time over threshold measurements and fast GbE optical links for the data transmission.

### Collaboration

PANDA Collaboration (<http://www-panda.gsi.de/>)

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