Subject: Contribution to NDIP 2017
Posted by Albert Lehmann on Fri, 24 Feb 2017 14:08:48 GMT
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Dear colleagues,

on behalf of Merlin I post an abstract and a summary for an overview talk about the Barrel TOF detector he intends to give at NDIP 2017 in Tours (France).

The submission deadline is March 1, therefore we would appreciate to receive your comments until next Monday, 27th, in the afternoon. Please note that the abstract is limited to 200 words (currently we have 199).

Best regards,
Albert

Abstract:
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The PANDA barrel-TOF detector

This talk describes the technical layout and the expected performance of the Barrel Time-of-Flight detector (Barrel TOF) for the PANDA target spectrometer. PANDA is a fixed target experiment with antiprotons colliding with stationary hydrogen atoms. The main goal of the detector is studying open questions in hadron physics by performing charmonium spectroscopy and investigating possible exotic states as glueballs and hybrids. The Barrel TOF detector has been designed to precisely measure the time at which a charged particle transits the detector with a resolution superior to the other sub-detectors of PANDA. It is designed to achieve a time resolution below 100 ps (sigma) which allows for good event separation as well as particle identification. It will also signal the topology of physics events, hence setting cornerstones for the event classification. The implementation of the Barrel TOF is based on very fast organic scintillator tiles with a size around 90x30x5 mm^3 coupled to Silicon Photomultipliers. The total of 2000 tiles read out by 16k SiPMs cover an azimuthal angle from 22.5° to 150° and an area of about 5 m^2. The current prototypes achieve ~60 ps, well below the design goal. The detector R&D is now in a matured stage.

File Attachments

1) summary_merlin.pdf, downloaded 675 times