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Subject: RICH B-TOF Abstract and summary

Posted by [Sebastian Zimmermann](#) on Thu, 12 Apr 2018 08:37:07 GMT

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Here is the abstract and the summary (attached) for the B-TOF contribution for the RICH conference.

The submission deadline is on Sunday the 15th, so I would ask for feedback until Saturday the 14th.

Kind regards  
Sebastian

Abstract:

The barrel-Time-of-Flight detector is one of the outer layers of the multi-layer design of the PANDA target spectrometer, covering an angle of  $22^\circ < \theta_{\text{lab}} < 150^\circ$ . PANDA, which is being built at the FAIR facility, will use cooled antiprotons on a fixed Hydrogen or nuclei target, to study broad topics in hadron physics.

The detector is a scintillating tile hodoscope with an SiPM readout. A single unit consists of a  $90 \times 30 \times 5 \text{ mm}^3$  fast plastic scintillator tile and  $3 \times 3 \text{ mm}^2$  SiPM photosensors on both ends. Four SiPMs are connected in series to overcome the limited sensor size of a single SiPM sensor and to improve the time resolution drastically ( $\sim 100 \text{ ps}$  to  $50 \text{ ps}$ ).

While the PANDA experiment is equipped with DIRC detectors for PID of faster particles, the barrel TOF complements the setup by providing additional PID information up to  $\sim 1.4 \text{ GeV}/c$  and a  $\pi/K$  separation of  $\sim 5 \sigma$  up to the Cherenkov threshold.

In this contribution we will also review recent topics on SiPMs and compare them to MCP-PMTs.

### File Attachments

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1) [Summary.pdf](#), downloaded 369 times

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