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## R&D for the PANDA Barrel DIRC (PANDA)

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The PANDA detector requires excellent particle identification (PID) for the full solid angle and a wide momentum range. In the barrel region of the detector the hadron PID will be performed by a DIRC counter. The successful BABAR DIRC inspired the baseline design of the PANDA Barrel DIRC, which was further advanced by such modifications as fast photon timing and focusing optics. Narrow long radiator bars and an oil-filled expansion volume are at the core of the baseline design. Detailed simulations have shown that the PID performance of this design meets the PANDA PID requirement. However, in order to reduce the detector cost and optimize the performance, a number of alternative design elements and parameters have been studied. The most significant design alternative is the use of wide radiator plates instead of narrow bars. This option would reduce the number of radiator pieces to be polished, and thus result in significant fabrication cost savings. Other important design options include the use of individual compact prism-shaped expansion volumes and an advanced focusing system. The extensive R&D program includes the detailed PANDA Barrel DIRC simulation and testing of the increasingly complex prototypes in particle beams. The simulation studies and results of the test beam campaigns will be discussed in this contribution.

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