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Fast Simulations for the PANDA Experiment at FAIR

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As one of the primary experiments to be located at the new Facility for Antiproton and Ion Research in Darmstadt the PANDA experiment aims for high quality hadron spectroscopy from antiproton proton collisions. The versatile and comprehensive projected physics program requires an elaborate detector design. The detector for the PANDA experiment will be a very complex machine consisting of a large number of different subdetectors like various tracking detectors, electromagnetic calorimeters, different devices for particle identification etc.

The simulation of such a system is a very demanding task in terms of computing power as well as man-power, since in this early stage of the experiment the detector design is not completely fixed and different options for the realization of various subsystems have to be taken into account.

For optimization and tuning of the individual detector components a reliable simulation is mandatory, which allows to investigate acceptance and efficiency of various physics benchmark channels for large numbers of events.

Therefore, a fast simulation providing effective parametrization of detector acceptance and resolution was implemented. Presented will be the techniques for various aspects of this simulation model as well as applications.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

PANDA

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