Contribution ID: **53** Type: **not specified**

Contribution of the MVD to the charm spectroscopy at PANDA

The Micro-Vertex-Detector (MVD) is the innermost detector of the PANDA experiment, one of the key projects at the future FAIR facility in Darmstadt.
In particular, the experiment is designed to render possible precision spectroscopy in the charmonium sector. This includes the study of open-charm mesons and baryons, charmonia and exotic states.
The distance of the innermost MVD layers to the nominal primary interaction vertex will be 20 mm only. A high vertex resolution of better than 100 μm can be achieved allowing a proper separation of secondary vertices of short-lived particles, e.g. D-mesons, from the primary interaction vertex. Furthermore, the information of the first hit points in the MVD improves the momentum resolution significantly. The impact of these features on the PANDA physics program in the charm sector will be presented including the reconstruction of charmed mesons and possibly exotic states such as the X(3872). Due to the implementation of a detailed detector model in the physics simulation the impact of a realistic material budget on the physics performance is included.

The work was supported by EU Dirac FP6 and BMBF.

Primary author: Mr WÜRSCHIG, Thomas (HISKP, Uni Bonn)

Co-authors: Mr ZAUNICK, Hans-Georg (HISKP, Uni Bonn); Prof. BRINKMANN, Kai-Thomas (HISKP, Uni Bonn); Mr MERTENS, Marius C. (IKP, FZ Jülich); Mr KLIEMT, Ralf (HISKP, Uni Bonn); Mr JÄKEL, René (TU Dresden); Mr BIANCO, Simone (HISKP, Uni Bonn); Mr STOCKMANNS, Tobias (IKP, FZ Jülich)

Presenter: Mr WÜRSCHIG, Thomas (HISKP, Uni Bonn)