The 8th International Conference "Distributed Computing and Grid-technologies in Science and Education" (GRID 2018)

Contribution ID: **339** Type: **Sectional reports**

Geometry Database for the CBM experiment and its first application to experiments in the NICA project

Tuesday 11 September 2018 13:30 (15 minutes)

This paper is dedicated to the current state of the Geometry Database (Geometry DB) for the CBM experiment and a first result of using the Geometry DB for NICA project. Geometry DB is an information system that supports the CBM geometry. The main aims of Geometry DB are to provide the storage of the CBM geometry, to manage the geometry modules, to assemble various setups as combinations of geometry modules and additional files, to provide its support. The development takes into account the specifics of the workflow for simulation of particles transport through the setup. Both Graphical User Interface (GUI) and Application Programming Interface (API) are available for members of the CBM collaboration. In our approach, the details of the geometry modules are stored in the format of ROOT files. Such a technique allows using the Geometry DB in the NICA project: BM@N and MPD experiments.

Primary authors: Dr AKISHINA, Elena (JINR); Mr ALEXANDROV, Evgeny (JINR); Dr ALEXANDROV, Igor (JINR); FILOZOVA, Irina (JINR); Dr GERTSENBERGER, Konstantin (JINR); Dr ROGACHEVSKIY, Oleg (JINR); Prof. IVANOV, Victor (JINR, LIT); Dr FRIESE, Volker (GSI Darmstadt)

Presenter: FILOZOVA, Irina (JINR)

Session Classification: 10. Databases, Distributed Storage systems, Datalakes

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