

Software development for the NICA experiments: MpdRoot & BmnRoot

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The software for detector simulation, reconstruction and analysis of physics data is an essential part of each high-energy physics experiment. A new generation of the experiments for the relativistic nuclear physics is expected to be started up in the nearest years at the Nuclotron-based Ion Collider facility (NICA) being under construction at the Joint Institute for Nuclear Research in Dubna: the fixed target experiment BM@N (Baryonic Matter at Nuclotron), whose technical runs were started in 2015, and the future MPD (Multi-Purpose Detector) experiment on ion collisions, which will operate at the storage rings of the NICA facility. The event data model of the experiments is shown. The status of the software frameworks MpdRoot and BmnRoot developed for the MPD and BM@N is considered. For these tasks many additional systems, such as raw data converter, monitoring systems, event display, databases, parallelization tools and others have been developed.

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