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Development of the Event Metadata System for the NICA experiments

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Particle collision experiments are known to generate substantial amount of data that must be stored and, later, analyzed. Typically, only a small subset of all the collected events is relevant when performing a particular physics analysis task. Although it is possible to obtain the required subset of records directly, by iterating through the whole volume of the collected data, the process is very time and resource consuming. Instead, a more convenient approach is to have an event metadata or indexing system that stores summary properties of all events and allows for fast searching and data retrieval based on various criteria. Such a system, called Event Metadata System, is being developed for the fixed-target and collider experiments of the NICA project. The design of the system, its components, user interfaces and REST API service, its integration with existing experiment systems and software, as well as associated challenges are presented.

Summary

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