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A Plugin-Based Software Framework for Data Acquisition and Processing

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In response to the diverse requirements for data acquisition and online data processing in scenarios such as high-energy physics detector research and pre-research experiments, this talk proposes a highly scalable data acquisition and online data processing software framework based on the modular design concept. The framework represents the readout and data processing processes as basic data processing units. It could simplify the creation of processing unit classes based on a C++ designed dependency injection pattern. Within the framework, processing units can be freely assembled to form data processing workflows through configuration files. Additionally, users can develop electronics interaction plugins to meet various electronics configuration and readout requirements, and generate data streams that fulfill the requirements of different experiments through configuration files. This framework presents an easier solution for data acquisition and online data processing in high-energy physics experiments.

Minioral

Yes

IEEE Member

No

Are you a student?

Yes

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