

Activities

- New framework of CEPC software proposed by Weidong et al to speed up the simulation study and also for the future real experiments
 - Simple, flexible, high efficiency, parallel computing support, user-friendly, …
- Based on SNiPER: https://github.com/SNiPER-Framework/Sniper, A light weighted framework (Gaudi-like) developed by Jiaheng and other people.
- Work started, and also a tutorial given by Jiaheng on Monday

Design (prototype)



Key Concepts



DLElement: Dynamically Loadable Element

- Task
- Algorithm
- Service Each DLElement object has a unique string name(path)
- Tool
- Data Memory Service
- Incident
- Property
- Log (message output)

Sub-algorithm scheme

Task and SubTask provide a more flexible execution procedure

- SubTask(s) are executed synchronously on demand
- Can be used for different event loops

Such as background mixing, ...

Multi-Thread Computing (run each task in an individual thread)



Plan

- Plan on new framework
 - Common Functions
 - EventStore for Collider Physics Experiments
 - Data Model: be similar to the LCIOEvent, but ROOT based
 - Data (ROOT format) I/O Services
 - Convert the existed LCIO data to ROOT data for analysis
 - Before the end of May 2019?
 - Other services and algorithms
 - Geometry service based on DD4hep
 - marlin::Processor -> Sniper Algorithm migration should be easy
 - Keep similar interfaces, such as data model and geometry
- Plan for migration
 - Tracking package will be done first by November workshop : Yao, Linghui, and Liangliang
 - Then PFAs: Manqi+others for Arbor, Chunxiu and Gang for Pandora
 - Others ...

Some considerations

- A new hit level fast simulation will be developed for detector & physics study: fatras, SGV, ...
- New tracking tool (ACTS, a common tracking software) also planned to be used in the new software: Jin, Hongbo, Yubo, Gang, ...
- We need a dedicated plan for the development process, as well as funds and man power