

First look at particle flow in LAr calorimeter using Pandora in Key4hep framework

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Future detector studies rely on advanced software tools for performance estimation and design optimization. Particle flow reconstruction is a key ingredient in optimal jet energy resolutions. While Pandora stands out as a well-established algorithm for particle flow analysis, its application has primarily been confined to high-granularity CALICE calorimeters.

This limitation prompted exploration into its compatibility with other detector types. Key4hep, a turnkey solution for experiment lifecycles, offers a flexible framework that allows different experiments to benefit from its synergies. Leveraging Key4hep, PandoraPFA was successfully adapted to study particle flow in a Liquid-Argon calorimeter for the first time. This presentation examines the integration of Pandora PFA into the Key4hep framework and its application in a LAr calorimeter. Furthermore, it assesses Pandora PFA's ability to distinguish between particle showers and discusses its implications on the jet energy resolution.

Alternate track

1. Computing, AI and Data Handling

I read the instructions above

Yes

Primary author: SASIKUMAR, Swathi (CERN)

Co-authors: SAILER, Andre (CERN); FRANCOIS, Brieuc (CERN)

Presenter: SASIKUMAR, Swathi (CERN)

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