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An introduction to the particle flow algorithm for ILC, ArborPFA

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The physics research on the future International Linear Collider(ILC) needs both state-of-the-art detectors and dedicated software with high performance. In this article, a software to reconstruct final state particles in the jet environment, ArborPFA, is elaborated. Using multiple pattern recognition algorithms and the high granularity of calorimeters, particles are reconstructed by re-building their original showers as oriented trees. After a successful implementation for the SDHCAL prototype, the algorithms have been ported to the entire ILD detector. Followed by describing the pattern recognition algorithms, local energy corrections due to the detector geometry are presented. The physics performance of the ArborPFA algorithm on di-jet events is finally discussed.

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