



Contribution ID: 301

Type: Oral presentation using Zoom

Kinematic fitting for ParticleFlow Detectors at Future Higgs Factories

Thursday 28 October 2021 16:10 (20 minutes)

In many analyses in Higgs, top and electroweak physics, the kinematic reconstruction of the final state is improved by constrained fits. This is a particularly powerful tool at e^+e^- colliders, where the initial state four-momentum is known and can be employed to constrain the final state. A crucial ingredient to kinematic fitting is an accurate estimate of the measurement uncertainties, in particular for composed objects like jets. This contribution will show how the particle flow concept, which is a design-driver for most detectors proposed for future Higgs factories, can — in addition to an excellent jet energy measurement — provide detailed estimates of the covariance matrices for each individual particle-flow object (PFO) and each individual jet. Combined with information about leptons and secondary vertices in the jets, the kinematic fit enables to correct b - and c -jets for missing momentum from neutrinos from semi-leptonic heavy quark decays. The impact on the reconstruction of invariant di-jet masses and the resulting improvement in ZH vs ZZ separation will be presented, using the full simulation of the ILD detector concept.

1st preferred time slot for your oral presentation

19:00-21:00 JST (12:00-14:00 CEST, 6:00-8:00 EDT, 3:00-5:00 PDT)

2nd preferred time slot for your oral presentation

15:30-17:30 JST (8:30-10:30 CEST, 2:30-4:30 EDT, 23:30-1:30 PDT)

Primary author: RADKHORRAMI, Yasser (DESY)

Presenter: RADKHORRAMI, Yasser (DESY)

Session Classification: F-3: Higgs properties

Track Classification: Parallel sessions: Topical Groups: Session F: Higgs properties