



Contribution ID: 95

Type: Oral presentation using Zoom

## Tau reconstruction in $e^+e^- \rightarrow \tau^+\tau^-$ at the ILC250

*Wednesday, 27 October 2021 19:48 (24 minutes)*

The International Linear Collider (ILC) is a next-generation electron-positron linear collider proposed to search for new physics beyond the Standard Model.

In the ILC, the International Large Detector (ILD) has been proposed as a detector for the precise measurement of final state particles. Collision of electron and positron generates tau lepton pair in ILC experiment. This process can be used to search for new interactions, also making use of our ability to measure the tau polarisation. Correct reconstruction of the tau decay mode is important for the tau polarisation measurement.

In this study, we explicitly extract neutrino momentum to calculate optimal polarimeters which is the cosine of the angle the polarimeter vector makes to the tau flight direction including the momenta of neutrino, charged and neutral pions.

The aim of this study is reconstruction of tau spin in order to measure polarisation to investigate new physics and to estimate how well we can reconstruct these polarimeter distributions using fully simulated, reconstructed, and selected events.

### 1st preferred time slot for your oral presentation

10:00-12:00 JST (3:00-5:00 CEST, 21:00-23:00 EDT, 18:00-20:00 PDT)

### 2nd 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)

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**Session Classification:** I: Electroweak physics

**Track Classification:** Parallel sessions: Topical Groups: Session I: Electroweak physics