



Contribution ID: 45

Type: Oral presentation using Zoom

## Measurement of $\sigma(e^+e^- \rightarrow HZ) \times$ cal Br( $H \rightarrow ZZ^*$ ) at the 250 GeV ILC

Thursday, 28 October 2021 15:30 (20 minutes)

We report on studies of the  $e^+e^- \rightarrow HZ$  process with the subsequent decay of the Higgs boson  $H \rightarrow ZZ^*$ , where the  $ZZ^*$  combination is reconstructed in the final states with two jets and two leptons. The analysis is performed using Monte Carlo data samples obtained with detailed ILD detector simulation assuming the integrated luminosity  $2 \text{ ab}^{-1}$ , the beam polarizations  $calP_{e^-e^+} = (-0.8, +0.3)$ , and the center-of-mass energy  $\sqrt{s} = 250 \text{ GeV}$ . The analysis is also repeated for the case of two  $0.9 \text{ ab}^{-1}$  data samples with polarizations  $calP_{e^-e^+} = (\mp 0.8, \pm 0.3)$ . Contributions of the potential background processes are taken into account based on the available MC event samples. The  $e^+e^- \rightarrow HZ$  process measurement allows to obtain the width of the Higgs boson in a model-independent approach.

### 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)

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**Session Classification:** F-3: Higgs properties

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