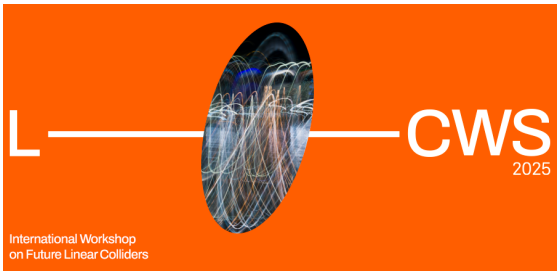

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Evaluation of measurement accuracy of Higgs coupling constant to strange quarks in the International Linear Collider

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The measurement of Higgs coupling constants is one of the most important goals for Higgs factories. While the couplings of the Higgs boson to the top and bottom quarks have been experimentally confirmed, the coupling to the strange quark has not yet been observed due to its extremely small decay branching ratio.
We evaluated the measurement accuracy of the Higgs coupling to the strange quark using simulated data based on the ILD detector concept for the International Linear Collider(ILC). The analysis focuses on the process $e^-e^+ \to ZH \to Z\bar{s}s$ at a center-of-mass energy of 250 GeV. In our study, strange tagging is performed using a Particle Transformer (ParT), which identifies hadrons taking dE/dx and 100 ps time-of-flight as input variables. We analyzed three Z boson decay modes and obtained the results by calculating their significance.

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