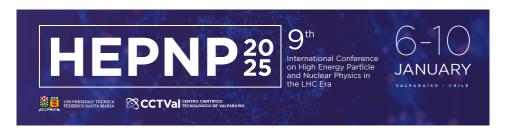
9th International Conference on High Energy Particle and Nuclear Physics in the LHC Era



Contribution ID: 502 Type: parallel

Lepton Flavour Violating Higgs decays at the Compact Linear Collider (CLIC) and Future Colliders

Thursday 9 January 2025 15:10 (20 minutes)

This talk provides an update on the current status of future collider projects, like the Compact Linear Collider (CLIC), the Future Circular Collider (FCC). It briefly outlines their progress and ongoing developments, while also addressing the European Strategy for Particle Physics recommendations.

I this context, Lepton flavour violating Higgs decays could appear in models beyond the Standard model of particle physics. In this talk I will present a sensitivity study of the Compact Linear Collider (CLIC) for this processes were the final states can be electron-muon pairs, tau-muon pairs or tau-electron pairs. Limits at 95% CL on the branching ratios of these processes were calculated at $2.5\,ab^{-1}$ of data at $\sqrt{s}=1.4$ TeV and $\sqrt{s}=3$ TeV. We obtained $BR(H\to e\mu)<7.2\times10^{-3}\%$, $BR(H\to \tau\mu)<0.024\%$ and $BR(H\to e\tau)<0.036\%$ for $\sqrt{s}=1.4$ TeV, and, $BR(H\to e\mu)<0.8\times10^{-3}\%$, $BR(H\to \tau\mu)<0.007\%$ and $BR(H\to e\tau)<0.019\%$ for $\sqrt{s}=3$ TeV.

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Presenter: GARAY WALLS, Francisca (Pontifical Catholic University of Chile (CL)) **Session Classification:** Parallel session 7: Beyond The Standard Model (2/2)