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Search for the cLFV in $Y(2S) \rightarrow l (l=e, \mu)$ tau decays at Belle.

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The conservation of lepton flavor is one of the accidental symmetries of the SM. Charged lepton flavor violating processes are forbidden in the SM. Still, some new physics models, such as the leptoquark model, predict these processes that could be observed in a high-energy physics experiment.

Bottomonium system is a good place to study such processes. Belle experiment is a flavor physics experiment at KEKB asymmetric e^+e^- collider, at KEK, Japan. It mainly collected the data at the energy of $Y(4S)$, but it also collected some data at $Y(nS; n = 1, 2, 3)$, and Belle has the world's largest data sample for $Y(2S)$. We will present a search for charged lepton flavor violation in $Y(2S) \rightarrow l\tau (l=e, \mu)$ decay where tau is reconstructed from $\tau \rightarrow l \nu_l \nu_\tau$ and $\tau \rightarrow \pi^+\pi^0\nu_\tau$ using 25 fb⁻¹ data collected at $Y(2S)$ resonance with Belle Detector.

Session

Quark and Lepton Flavour Physics

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