

Improved analysis for lepton-nucleus CLFV scattering $\ell_i N \rightarrow \ell_j X$ by scalar interaction

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We revisit charged lepton flavor violating (CLFV) scattering $\ell_i N \rightarrow \ell_j X$ mediated by scalar interaction. We point out that a new subprocess $\ell_i g \rightarrow \ell_j g$ via the effective interactions of CLFV mediator and gluon gives large contribution. Furthermore, in the light of quark number conservation, we consider quark pair-production processes $\ell_i g \rightarrow \ell_j Q \bar{Q}$ (Q denotes heavy quarks) instead of $\ell_i Q \rightarrow \ell_j Q$. We discuss model discrimination by analyzing final state distributions.

Presenter: YAMANAKA, Masato (Kyushu Sangyo University)

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