Contribution ID: **6** Type: **not specified**

Revisit Lepton Flavor Violating Deep Inelastic Scattering

Monday 2 September 2024 12:00 (20 minutes)

New physics models allow Lepton Flavor Violating (LFV) reactions which are exactly forbidden in the standard model. Hence search for LFV is a clue to the new physics, which unveil the flavor structure and the symmetries behind it. We revisit LFV lepton-nucleus deep inelastic scattering, $\ell_i N \to \ell_j X$ (ℓ_i and ℓ_j are different flavor lepton, N is nucleus, and X is hadron), which is a leading probe for the LFV. We point out that a new subprocess $\ell_i g \to \ell_j g$ (g represents gluon) via the effective interactions of LFV mediator and gluon gives large contribution. Furthermore, in the light of quark number conservation, we consider quark pair-production processes $\ell_i g \to \ell_j Q \bar{Q}$ (Q denotes heavy quarks) instead of $\ell_i Q \to \ell_j Q$. We discuss model discrimination by analyzing final state distributions.

Author: Dr YAMANAKA, Masato (Hosei University)

Presenter: Dr YAMANAKA, Masato (Hosei University)