

Charged Lepton Flavour Violating Meson Decays in Seesaw Models

The occurrence of neutrino oscillations demands the existence of flavour violation in charged lepton sector. The relation between the branching ratios of different charged lepton flavour violating (CLFV) decay modes depends on the details of the neutrino mass model. In this work, we consider the three types of simple seesaw mechanisms of neutrino masses and study the correlation between the radiative CLFV decays and the meson CLFV decays. We find that the meson CLFV decay branching ratios are negligibly small in type-II seesaw mechanism whereas they are constrained to be at least three (two) orders of magnitude smaller than the radiative CLFV decay branching ratios in the case of type-I (type-III) seesaw mechanism. Thus the relationship between these two modes of CLFV decays helps in distinguishing between different types of seesaw mechanism. If, the branching ratios of CLFV decays of mesons are larger than those of radiative CLFV decays, it provides a strong hint that the neutrino mass generating mechanism is more complicated than simple seesaw.

Authors: Dr MORE, Jai (INDIAN INSTITUTE OF TECHNOLOGY BOMBAY); RAO, Kumar (Indian Institute of Technology, Bombay (IITB)); SAHU, PURUSHOTTAM; Prof. UMASANKAR, Sankagiri (Indian Institute of Technology Bombay (IIT Bombay)); AWASTHI, praves