

## Charged Lepton Flavor violation at the EIC

*Monday 27 September 2021 12:20 (25 minutes)*

In the quest to map out the structure of the proton in exquisite detail, the Electron Ion Collider (EIC) will collide electrons and protons at high energy with unprecedented luminosity.

In this talk I will discuss how to exploit the features of the EIC to explore physics beyond the Standard Model. I will focus on charged-lepton-flavor-violating (CLFV) interactions in which an electron is converted into a tau lepton, which, in several BSM models, are intimately connected with the generation of neutrino masses. I will discuss the luminosity and efficiency requirements for competitive CLFV searches at the EIC. I will then compare the EIC sensitivity with existing bounds from LEP and the LHC, and discuss the complementarity of the EIC with the next generation of B factories.

I will identify the most promising directions in parameter space for the EIC to explore, and discuss the theoretical improvements needed to take full advantage of the EIC potential.

### What is your topic?

Lepton universality and flavour violation

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