

## Testing Lepton Flavor Universality at the EIC

Lepton flavor universality(LFU), as one of the most important hypotheses in the Standard Model(SM), deserves a high precision test at colliders. Any deviation, if probed, may show us the evidence of the underlying new physics(NP). The Electron-Ion Collider(EIC) has drawn much attention recently. In this work, we will explore the potential of the LFU test and NP search at the EIC. Concretely, we focus on semi-leptonically decayed b-hadrons generated from DIS processes, and compare between tau-mode decays and the other two generations of leptons, where, as reported in many colliders, generally anomalies exist. Different decay channels are taken into account, including  $B_c \rightarrow J/\psi \ell \nu$ ,  $B_s \rightarrow D_s^{(*)} \ell \nu$ ,  $\Lambda_b \rightarrow \lambda_c \ell \nu$  and  $B_c \rightarrow \ell \nu$ . We would like to report the possible sensitivity of measurements, and show how these altogether constrain NP parameters.

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