## Hadronic Contributions to New Physics Searches 2019



Contribution ID: 47

Type: not specified

## Lorentz-violating effects in hadronic processes

Friday 27 September 2019 12:40 (15 minutes)

An approach is presented for the calculation of hadron-lepton and hadron-hadron interactions at large momentum transfer in the presence of Lorentz-violating background fields affecting quarks. Cross sections for deep inelastic scattering and the Drell-Yan process are calculated at leading order for minimal and nonminimal Lorentz violation using the Standard-Model Extension, an effective field theory characterizing general Lorentz-violating effects for the Standard Model fields and General Relativity. Estimated bounds are placed using sidereal-time analyses of existing HERA, LHC, and future US-based electron-ion collider data.

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Session Classification: Flavor