



Contribution ID: 119

Type: **not specified**

## Probing Lorentz-violating electrodynamics with CMB polarization

*Wednesday 30 August 2023 15:00 (25 minutes)*

The talk will be based on this paper JCAP03(2023)018. In this work, we performed a comprehensive study of the signatures of Lorentz violation in electrodynamics on the Cosmic Microwave Background (CMB) anisotropies. In the framework of the minimal Standard Model Extension (SME), we considered effects generated by renormalizable operators, both CPT-odd and CPT-even. These operators are responsible for sourcing, respectively, cosmic birefringence and circular polarization. We propagated jointly the effects of all the relevant Lorentz-violating parameters to CMB observables and provided constraints with the most recent CMB datasets. The bounds we found are orders of magnitude stronger than previous CMB-based limits, superseding also bounds from non-CMB searches. This analysis provides the strongest constraints to date on CPT-violating coefficients in the minimal SME from CMB searches.

**Presenter:** LEMBO, Margherita

**Session Classification:** Parallel