

Cosmology from the smallest scales

Monday 11 September 2023 11:30 (1 hour)

Recent tensions and anomalies have motivated the need to explore novel theoretical possibilities beyond the standard cosmological model. In this talk, I will argue that small-scale CMB observations can play a crucial role in the study of several physical mechanisms, potentially revealing unique signatures of new physics that would be difficult to detect on larger angular scales. I will provide and discuss three different examples of emerging hints of new physics from the smallest scales that involve the three pillars of the cosmological model: Inflation, Dark Matter, and Dark Energy. These hints differ both in their interpretations and implications and include models featuring interactions in the dark sector of the theory, able to reconcile (part of) the cosmological tensions.

Presenter: Prof. GIARE, William (University of Sheffield)