

Complementarity of CMB and 21cm for the study of dark matter properties and exotic reionization

Monday, 30 March 2020 17:00 (1h 15m)

In this talk, I will review how the CMB and 21cm can be used to study dark matter (DM) properties, as well as sources of exotic (early) reionization. I will first discuss how the CMB can provide strong constraints on scattering between DM and baryons, and probe the parameter space suggested by the EDGES anomaly. I will then introduce models that could reconcile the EDGES anomaly while being consistent with CMB observations. Secondly, I will explain how the CMB can be used to probe the existence of extra sources of ionization and heating, and compare existing constraints to what future 21cm experiment could do. I will also discuss the status in the Planck 2018 data of a hint for early exotic reionization originally suggested in earlier Planck release.

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