Cosmic Magnetism in Voids and Filaments



Contribution ID: 74

Type: not specified

Modelling primordial magnetic fields in galaxy clusters (online)

Thursday, 26 January 2023 14:20 (20 minutes)

Primordial magnetic fields (PMFs) are possible candidates for explaining the observed magnetic fields in the Universe. In general, there are two competing scenarios of primordial magnetogenesis: inflationary and phase-transitional. In this work, we study the amplification of both inflation- and phase-transition-generated PMFs in a forming galaxy cluster using magnetohydrodynamic cosmological zoom-in simulations. In this talk, we will discuss how the initial magnetic conditions can restrict the efficiency of the overall amplification. We find more efficient magnetic amplification for the large-scale, inflationary models than the phase-transition-generated seed fields. Finally, we will discuss the possibility of distinguishing between different magnetogenesis scenarios in future observations.

Presenter: DOMINGUEZ FERNANDEZ, Paola (Dipartimento di Fisica e Astronomia, Universitá di Bologna)

Session Classification: Thursday