

## Magnetic fields in galaxy clusters

*Tuesday 14 May 2024 14:00 (45 minutes)*

Galaxy clusters host Mpc-scale diffuse radio emission giving us evidence of large-scale magnetic fields in the Universe. Among the potential explanations for the observed magnetic fields in these clusters are primordial magnetic fields (PMFs). There are two main theories for primordial magnetogenesis: those formed during inflation and those created during phase transitions. In my talk, I will discuss the dynamics of initially large- and small-scale correlated magnetic fields corresponding to inflation- and phase-transition-generated PMFs in simulated galaxy clusters. I will additionally touch upon a hybrid numerical framework to study continuum and polarised emission in MHD simulations of galaxy clusters.

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