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Cosmological simulations including magnetic fields and realistic feedback from galaxies

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We use the FLAMINGO model of galaxy formation to study the cosmological evolution of primordial magnetic fields. This model was calibrated, using machine-learning techniques, to reproduce key observables of the galaxy and cluster population. This gives strong constraints on the feedback mechanisms around haloes and, as a consequence, on the spatial regions where magnetic field sourced in galaxies is present.
We can thus analyze the level of void pollution by strong fields and put interesting limits on what primordial fields information can be recovered from observational campaigns targeting void regions.

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