

Galactic foregrounds for the CMB

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We find imprints of galactic structures viz. the ‘radio loops’ [1] in the derived maps of the cosmic microwave background, even at microwave frequencies where emission by dust dominates [2]. The emission mechanism may be magnetic dipole radiation from dust grains enriched by metallic iron, or ferrimagnetic molecules [3]. This new foreground is present at high galactic latitudes, in particular in the BICEP2 observational window, and potentially dominates over the expected B-mode polarisation signal due to primordial gravitational waves from inflation .

References

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