
Synchrotron signatures from the cosmic-ray driven dynamo

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Abstract

Cosmic-Ray-driven dynamos produce magnetic arms in galactic disks and large-scale helical magnetic fields in galactic halos. Relying on numerical models of hybrid N-body and CR-MHD simulations we show formation of those structures. We discuss the relation of the 3D magnetic field structures with their counterparts in radio maps of synchrotron radio-emission. We suggest that X-shaped structures on polarisation radio-maps of edge-on galaxies result from the projection of large-scale magnetic helices onto the plane of sky.

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