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# The simulated and observed magnetism of the cosmic web

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## Résumé

Magnetic fields are nowadays routinely observed in galaxies and galaxy clusters, while relatively little is known about the magnetism in the large majority of the cosmic web, made of voids, sheets and filaments. However, probing magnetism on such large and rarefied scales potentially carries crucial information about the origin of cosmic magnetism, and significant detections of magnetism on such scales can enable us to discriminate between equally interesting scenarios for magnetogenesis (e.g. primordial inflationary models vs astrophysical models connected to galaxy formation processes). In particular, the study of magnetism through the Faraday Rotation effect has become a key player to produce tomography of the magnetised cosmic web, up to increasingly large redshifts. In this contribution I will present recent observational and theoretical advancements in the fields, which were made possible through the powerful combination of new low-frequency radio observations and the new generation of cosmological MHD simulations produced with supercomputers.

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