Magnetized LambdaCDM inhomogeneities and the cosmic dark ages

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Exact solutions of the perturbations equations in the magnetized LambdaCDM scenario are presented. They apply during the dark ages and, more specifically, after the baryons are freed from the drag of the photons. The magnetized growth rate of matter perturbations is compared with the growth index obtained in the concordance paradigm and under the assumption that dark energy does not cluster for a redshift window ranging from the epoch of reionization to the stage of dark-energy dominance. The constraints derived from this analysis are shown to be qualitatively complementary and quantitatively competitive with the bounds stemming from the analysis of the distortion patterns induced by the magnetized adiabatic mode on the temperature and polarization anisotropies of the Cosmic Microwave Background.

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