

Thermal history of the Universe at intermediate redshift: progress with 21cm absorption measurements

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The 21-cm signal and the high redshift IGM

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The recent results of the EDGES experiment motivate us to take a closer look at the standard calculation of the 21cm signal. I will give a short introduction to the physics of the 21cm line, and how its brightness temperature depends on the physical conditions in the high redshift IGM, namely the local gas temperature and the flux of Lyman-alpha photons. I will then describe recent work that shows how the CMB heats the gas in the presence of the same Lyman-alpha photons that are needed to produce the signal. Time permitting, I will also touch on the implications of the shape of the EDGES signal for the fluctuations in the 21cm background from the same cosmological period.

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