Contribution ID: **84** Type: **Talk**

Lensing of 21cm intensity mapping

Tuesday, 3 September 2019 17:00 (15 minutes)

My talk has two parts. First, I talk about second-order lensing of 21cm intensity mapping (IM). Like the CMB, 21cm IM temperature fluctuations have second and higher order lensing and no first-order lensing. We find a new (third order) lensing term that is neglected in the CMB lensing but is important for 21cm IM. We study the detectability of 21cm IM lensing with a Fisher matrix approach for the redshift range of z=2 to z=6 and find that with optimistic assumptions, we obtain a signal-to-noise of ˜10 for futuristic surveys like SKA2.
In the second part, I talk about our current project on estimating the first order lensing from cross-correlation of 21cm IM and galaxy clustering surveys. We introduce a new lensing estimator which has higher signal-to-noise compared to the estimator that is currently used for magnification bias detection.

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