Contribution ID: **66** Type: **Plenary/Parallel talk**

Next generation of CMB lensing power spectrum estimation

Friday, 26 August 2022 16:55 (20 minutes)

In this talk I will introduce a new CMB lensing power spectrum estimator for deep polarisation surveys. Thanks to the B modes of polarisation produced by gravitational lensing, upcoming surveys will optimally reconstruct the lensing field by iteratively delensing the observed polarisation maps. I will show that despite the increased complexity of the reconstructed lensing map, its power spectrum shares similarities to the state-of-the-art quadratic estimator. I will demonstrate that this new spectrum estimator and its likelihood are robust to modelling biases and can improve the signal to noise ratio of the lensing amplitude by 80% while keeping the numerical cost under control. This new lensing estimator can improve the constraints on a combination of cosmological parameters of interest, including the neutrino mass, by 30%.

Primary author: LEGRAND, Louis

Co-author: CARRON, Julien (University of Sussex)

Presenter: LEGRAND, Louis

Session Classification: Parallel Session Lecture Room

Track Classification: Radiocosmology