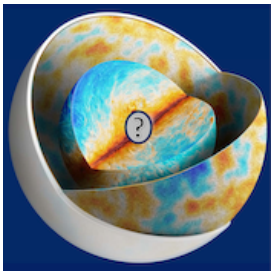

ID de Contribution: **24** Type: **Non spécifié**

Accounting for the beams in the parametric component separation

lundi 4 décembre 2023 18:05 (20 minutes)

Performing an efficient and reliable component separation is of fundamental importance for the data analysis of the current CMB experiments targeting primordial B-modes. In this talk I will present an extension of the parametric maximum likelihood-based component separation technique, where in the likelihood implementation it is allowed to go back and forth from the pixel to the harmonic domain. This, together with the implementation of a preconditioned conjugate gradient solver, allows us to reliably perform the component separation on more complex input frequency maps.
In particular, I will show how this method allows us to rigorously deal with beam-convolved input frequency maps. The approach used to date to account for the beams is to convolve all the frequency maps to a common resolution and then perform the component separation. In the alternative, more rigorous, method that I present we apply the beam deconvolution / convolution operations within the component separation step. These are performed in the harmonic domain, but the method still remains as much as possible in the pixel domain to exploit the advantages of pixel-based parametric component separation (e.g. dealing with the spatial variability of the foregrounds).

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Classification de Session: Contributions