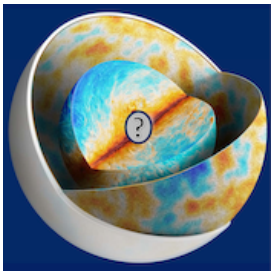

ID de Contribution: **26** Type: **Non spécifié**

A Differentiable Likelihood for CMB Analysis

lundi 4 décembre 2023 17:05 (20 minutes)

CMB power spectrum measurements from ground-based experiments are expected to match and surpass Planck-precision on cosmological parameters in the immediate future. With this constraining power comes great responsibility; the potential of detecting physics beyond the standard model demands a demonstrably robust analysis.
In this talk, I present a differentiable likelihood for CMB analysis designed for this level of scrutiny. The likelihood code is written in python and can be interfaced with widely available analysis software. The software is designed to leverage the power of the JAX-library, such that when paired with a differentiable theory code it provides a fully differentiable analysis framework from cosmological parameters to the chi-squared value. I showcase the basic use of the likelihood and highlight several applications of a fully differentiable pipeline. I emphasise the scope of robustness tests and analysis optimisation exercises made feasible in the differentiable framework.

Auteur principal: BALKENHOL, Lennart (Institut d'Astrophysique de Paris)

Orateur: BALKENHOL, Lennart (Institut d'Astrophysique de Paris)

Classification de Session: Contributions