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**Séminaire
DPhP**

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Expanding the BAO science case, inflation and neutrino masses

FLORIAN BEUTLER

University of Portsmouth, UK

Cosmology has the potential to test fundamental physics through the discovery of new particles (e.g. dark matter) and new fields that governed the Universe's expansion at early times (inflation). One of the most powerful tools available for such studies is the Baryon Acoustic Oscillation (BAO) signal. Many future galaxy redshift surveys are designed with BAO as their main science driver. In this talk, I will introduce two recently developed extensions to the standard BAO analysis. The first extension uses the BAO analysis pipeline for a search for primordial features, which can be used to constrain inflationary models. The second extension uses the phase of the BAO to constrain the effective number of relativistic particles in the early Universe. Given the robustness of the BAO feature and the hugely improved constraints we can expect from future surveys like DESI and Euclid, these extensions have the potential to significantly enrich the science output of these experiments.

Le café sera servi 10 minutes avant.

NB : La présentation d'une pièce d'identité est exigée à l'entrée du centre. Tous les auditeurs extérieurs sont priés de prévenir à l'avance Martine Oger, tél. 01 69 08 23 50, e-mail : martine.oger@cea.fr.