



## *Séminaire du Laboratoire de l'Accélérateur Linéaire*

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IAS

**Mardi 1 Mars 2016 à 11 :00**

## **Probe inflation and the reionization era with the CMB polarization at large angular scales : new preliminary Planck results and future prospects**

The accurate measurement of the CMB polarization at large angular scales is one of the key challenges left for the current and future CMB experiments. The large scale enhancement of the CMB polarization power spectra due to the reionization of the Universe in fact encodes unique informations about the reionization history and the inflationary epoch. In this talk I will go through a brief introduction about the CMB polarization, highlighting the scientific goals related to the analysis of the CMB data at large angular scales. I will present the new and improved -yet preliminary- results of the Planck data analysis at large angular scales. I will show that these preliminary Planck results confirm the trend towards a significantly smaller value of the reionization optical depth parameter  $\tau$ ; with respect to previous estimations from CMB polarization data. This result reduces the tension between CMB based analyses and constraints from other astrophysical sources. Finally I will discuss the improvement on the estimation of the tensor-to-scalar ratio parameter  $r$  when the B-modes data at large scales are included. I will present the theoretical implications and the future prospects of the quest of the B-modes at large and intermediate scales for forthcoming proposed CMB missions like LiteBird/CoRE++ (space), QUBIC (ground).

**Salle 101 du LAL - Bât. 200, Orsay**

Thé et café seront servis 5 mn avant le séminaire



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