



Irfu

Institut de recherche
sur les lois fondamentales
de l'Univers

**Séminaire
SPP**

Jeudi 12/06/2014, 11h00

CEA-Saclay Bat 141, salle André Berthelot

Detection of B-mode Polarization at Degree Scales using BICEP2

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The BICEP2 collaboration has recently reported detection of B-mode polarization in the Cosmic Microwave Background (CMB) anisotropy. BICEP2 observed for three years from the South Pole in Antarctica making an ultra deep map at 150 GHz of a 380 square degree patch of sky. Extracting the B-mode of the polarization pattern a > 5 sigma excess is found over the standard cosmological model at angular scales of a few degrees. Internal consistency tests demonstrate that systematics are small compared to the observed excess. Foreground contamination from our galaxy also appears to be smaller, although uncertainty concerning polarized dust emission remains. Cross correlation against existing 100 GHz maps confirms the excess and indicates a frequency spectral index consistent with CMB. The observed spectrum is well fit when including an inflationary gravitational wave component with the tensor/scalar ratio parameter $r=0.2$.

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. (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).