



**Lrfu**  
Institut de recherche  
sur les lois fondamentales  
de l'Univers

**Séminaire  
SPP**

**Lundi 13/06/2016, 14h00**

CEA-Saclay Bât. 141, salle André Berthelot

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**$B \rightarrow K^* \mu \mu$  and other  $b \rightarrow sl\bar{l}$  transitions : a  
theory status report**

**SÉBASTIEN DESCOTES-GENON**

LPT, Orsay

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The flavour-changing  $b \rightarrow sl^+l^-$  transitions ( $l = e, \mu$ ) are powerful probes of the Standard Model, for which recent LHCb data exhibit an interesting pattern of deviations. I will recall the current situation for the angular distribution of the  $B \rightarrow K^*(\rightarrow K\pi)\mu^+\mu^-$  decay, as well as for other outstanding  $b \rightarrow sl^+l^-$  transitions. I will discuss the theoretical approaches used to determine the Standard Model predictions for these observables and some of their shortcomings. I will show how a global fit of  $b \rightarrow sl^+l^-$  observables favours New Physics scenarios consistently with a high significance, and I will present a few specific models following these scenarios. I will also discuss a few alternative explanations proposed in the literature, before giving some short-term perspectives for these decays.

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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](mailto:martine.oger@cea.fr). (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).