



LABORATOIRE DE L'ACCÉLÉRATEUR LINÉAIRE

IN2P3-CNRS et Université PARIS-SUD
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SÉMINAIRES ACCÉLÉRATEURS

Roberto CIMINO

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Mardi 27 novembre 2012 à 10 : 30

Material Science for next generation Accelerator Vacuum systems

Most if not all of the accelerators now under study like LHC upgrades, (I)LC Damping Rings, SuperKEKB, SuperB etc, are all based on extremely high beam current and ultra-small beam size. Such highly ambitious operating conditions require extremely high pumping speed in reduced beam pipe openings and in presence of significant heat loads. Moreover, accelerators working with positively charged beams suffer from unconventional interaction between beam and Vacuum components. Beam instabilities are, in fact, predicted (and, in some cases, observed) as caused by the presence in vacuum, of low energy electrons. Such electrons are known to be produced by photo and/or electron interactions with the accelerator walls. The detailed characterization and the precise control of surface properties like Secondary Electron Yield (SEY), Photoemission, Photoelectron Yield (PY), photon Reflectivity (R) are becoming essential ingredients to design and construct a successful accelerator vacuum system. In this talk I will present some of these issues and show how “state of the art” surfaces science techniques seems to be very promising to find effective solutions to built vacuum systems meeting the stringent requirements of next generation accelerators.

Ce séminaire aura lieu dans la salle 101 du Bâtiment 200

Thé et café seront servis ¼ heure avant le séminaire

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