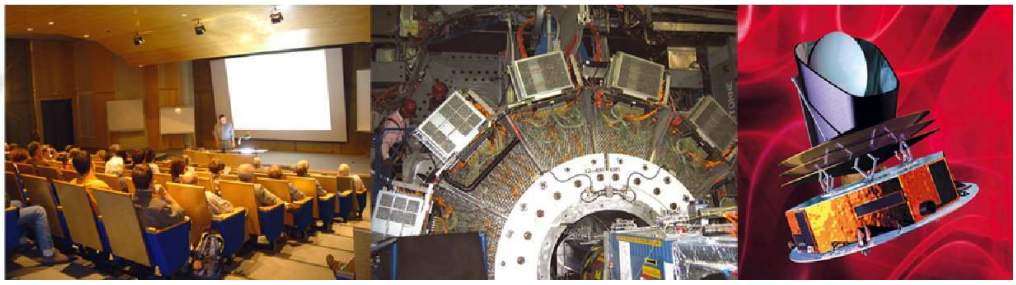
LABORATOIRE DE L'ACCÉLÉRATEUR LINÉAIRE



Séminaire du Laboratoire de l'Accélérateur Linéaire

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INFN Frascati

Mardi 24 Mai 2016 à 11 :00

New technologies for S-band and C-band RF structure realization and their application to the high gradient...

The gamma beam system of the European ELI-NP project foresees the use of a train of electron bunches colliding with a high intensity recirculated laser pulse. The linac is realized with S-Band and C-band structures for the multi-bunch operation working at a repetition rate of 100 Hz. Both the C-Band structures and the RF gun have been design, fabricated and successfully tested at high power reaching the final nominal paramenters of 33 MV/m average accelerating field and 120 MV/m cathode peak field at full repetition rate. Both type of structures implement new features in the design and in realization never implemented before. The C-band structures have been designed with an Higher Order Mode (HOM) damping system to avoid beam break-up (BBU) with a new mechanical design that has been done to simplify the fabrication, to reduce their cost and the risk of failure in the realization itself. On the other hand the RF gun has been fabricated with new technique recently developed at LNF that avoids any brazing process thus allowing to reach, in principle, higher gradients. After a short introduction on the LINAC for the ELI-NP gamma source, details of the electromagnetic and mechanical design of these structures will be presented with the results of the low and high power tests.

Salle 101 du LAL - Bât. 200, Orsay

Thé et café seront servis 5 mn avant le séminaire