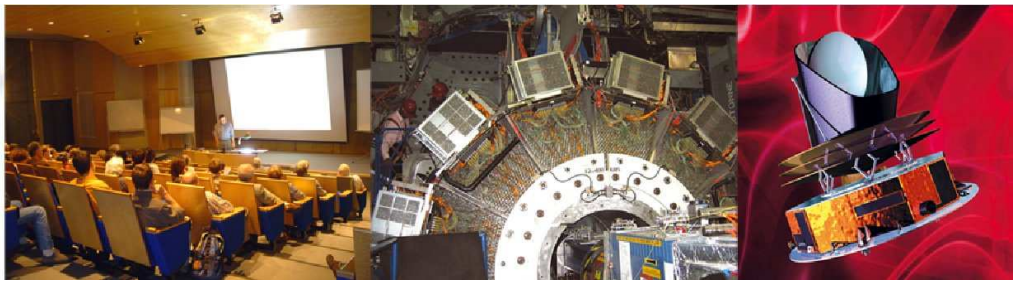
LABORATOIRE DE L'ACCÉLÉRATEUR LINÉAIRE



Séminaire du Laboratoire de l'Accélérateur Linéaire

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CERN

Mardi 16 Fevrier 2010 à 11 :00

The FLUKA Monte-Carlo code and its applications

In designing and operating accelerators and detectors numerous challenges have to be overcome, many of which require the application of a particle transport and interaction Monte-Carlo code in various stages. Related issues refer to important safety or machine protection concerns, the conception and optimization of machine and detector performance, up to the final validation of experimental data. For these purposes, the evaluation of key physical quantities such as energy deposition in the irradiated components, dose released in the sensitive elements, material and environmental activation, and fluence of particles at different locations, represents an essential ingredient. The quality of the code turns out to be critical for the achievement of the established goals when performing Monte-Carlo calculations for any application. This requires an accurate development and benchmarking of the underlying independent physics models, and their balanced and effective interplay, aiming at an increasingly reliable and precise picture of the radiation matter interaction, in order to address present and future research challenges. In this seminar, the capabilities of the FLUKA Monte-Carlo code with respect to the tasks outlined above are discussed as well as the embedded physical processes. Several applications are illustrated, spanning different CERN projects, benchmark measurements, and also other fields (e.g., hadron- therapy and space radiation protection).

Salle 101 du LAL - Bât. 200, Orsay

Thé et café seront servis 1/4 h avant le séminaire

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