CERN Colloquium

SPEAKER: Prof. Lance Dixon (SLAC)

TITLE: **"New Tools for Forecasting Old Physics at the LHC"**

DATE: Thu 20/01/2011 16:30

PLACE: Council Chamber

ABSTRACT

For the LHC to uncover many types of new physics, the "old physics" produced by the Standard Model must be understood very well. For decades, the central theoretical tool for this job was the Feynman diagram expansion. However, Feynman diagrams are just too slow, even on fast computers, to allow adequate precision for complicated LHC events with many jets in the final state. Such events are already visible in the initial LHC data. Over the past few years, alternative methods to Feynman diagrams have come to fruition. These new "on-shell" methods are based on the old principles of unitarity and factorization. They can be much more efficient because they exploit the underlying simplicity of scattering amplitudes, and recycle lower-loop information. I will describe how and why these methods work, and present some of the recent state-of-the-art results that have been obtained with them.

Organised by: Ignatios Antoniadis/PH-TH.....Tea and Coffee will be served at 16:00