



COLLOQUIUM DI FISICA

Giovedì 28 maggio 2015, ore 15.00
aula "A. Rostagni"

Prof. Gian Francesco Giudice

Senior Scientist al CERN

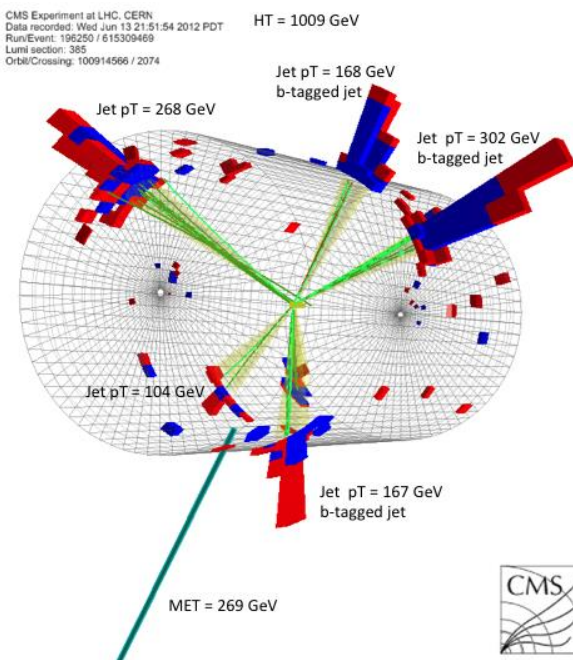
&

Prof. Luigi Rolandi

Senior Research Physicist al CERN e

Professore a Contratto per la Scuola Normale Superiore di Pisa

Searching for supersymmetry at the Large Hadron Collider



ABSTRACT :

The aim of the colloquium is to confront the theoretical and experimental points of view on searches for supersymmetry at the LHC. After an introduction on the theoretical motivations for supersymmetry, the experimental challenge will be reviewed. The LHC has produced some 10^{15} proton-proton collisions: how do we select the few extremely rare events with a pair of massive non-interacting particles? How do we search for high mass and highly ionizing particles? The ATLAS and CMS detectors have performed better than anticipated and this has

allowed us to search very effectively for rare phenomena, such as those predicted by supersymmetry. We conclude by discussing the lessons that have been learned from the experimental data and the prospects for the forthcoming LHC run at higher energies.