# CERN Colloquium

SPEAKER: Jonathan R. Ellis (CERN)

TITLE: **The LHC is safe**

DATE: Thu 14/08/2008 16:30

PLACE: Main Auditorium **


ABSTRACT

Concerns have been expressed from time to time about the safety of new high-energy colliders, and the LHC has been no exception. The LHC Safety Assessment Group (LSAG)(*) was asked last year by the CERN management to review previous LHC safety analyses in light of additional experimental results and theoretical understanding. LSAG confirms, updates and extends previous conclusions that there is no basis for any conceivable threat from the LHC. Indeed, recent theoretical and experimental developments reinforce this conclusion. In this Colloquium, the basic arguments presented by LSAG will be reviewed. Cosmic rays of much higher effective centre-of-mass energies have been bombarding the Earth and other astronomical objects for billions of years, and their continued existence shows that the Earth faces no dangers from exotic objects such as hypothetical microscopic black holes that might be produced by the LHC - as discussed in a detailed paper by Giddings and Mangano(**). Measurements of strange particle production at RHIC constrain severely the possible production of strangelets in heavy-ion collisions at the LHC, which also present no danger - as discussed in an addendum to the LSAG report. On a different note: although the LHC is no danger to the Earth, it may reveal the fate of the Universe by probing the nature of the vacuum(***).


(*) J.E., Gian Gudice, Michelangelo Mangano, Igor Tkachev and Urs Wiedemann: arXiv:0806.3414
(**) Steven Giddings and Michelangelo Mangano: arXiv:0806.3381
(***) S. Abel. J.E., J. Jaeckel and V.V. Khoze: arXiv:0807.2601

Organised by: Luis ALVAREZ-GAUME / PH-TH ----------
Tea and coffee will be served at 16:00