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Cosmic rays, clouds and climate

Jasper Kirkby, CERN

Among the most puzzling questions in climate change is that of solar- climate variability, which has attracted the attention of scientists for more than two hundred years. For most of this time, even the existence of solar-climate variability has been controversial - perhaps because the observations have largely involved correlations between climate and the sunspot cycle. However, more recent palaeoclimatic data, together with isotopic measurements of cosmic ray variability, provide clear evidence for solar/cosmic ray forcing of the climate. Although the underlying mechanism remains a mystery, satellite data suggest that clouds may be influenced by galactic cosmic rays, which are modulated by the solar wind and, on longer time scales, by the geomagnetic field and the galactic environment of Earth. This talk presents an overview of the palaeoclimatic evidence for solar/cosmic ray forcing of Earth's climate and reviews the possible physical mechanisms, which will be investigated by the CLOUD experiment at CERN.

Lundi 9 juillet 2007 à 15 heures

Bâtiment 701, salle 17c