LABORATORI NAZIONALI DEL GRAN SASSO

THEORETICAL SEMINAR ANNOUNCEMENT

On **January 16, 2007** at **14:30**, **L. Sindoni** from **SISSA, Trieste** will give a seminar entitled:

Phenomenology of Quantum Gravity and Finsler Geometry

Abstract:

A common feature of all Quantum Gravity (QG) phenomenology approaches is to consider a modification of the mass shell condition of the relativistic particle to take into account quantum gravitational effects. The framework for such approaches is therefore usually set up in the cotangent bundle (phase space). However it was recently proposed that this phenomenology could be associated with an energy dependent geometry that has been coined ``rainbow metric''. We show here that the latter actually corresponds to a Finsler Geometry, the natural generalization of Riemannian Geometry. We provide in this way a new and rigorous framework to study the geometrical structure possibly arising in the semiclassical regime of QG. We further investigate the symmetries in this new context and discuss their role in alternative scenarios like Lorentz violation in emergent spacetimes or Deformed Special Relativity-like models.

(''B. Pontecorvo'' room)