



Dipartimento di Fisica
Università di Cagliari
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HIGH ENERGY PHYSICS COLLOQUIA

21 marzo 2018 · ore 14:30 · aula A

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RELATIVISTIC SYMMETRIES AND DEFORMATION

Abstract

We can understand special relativity as a dimensionful deformation of Galilean relativity in terms of an invariant quantity c with dimensions of velocity. At the same time a deformation of special relativity in terms of an invariant time $\sqrt{\Lambda}c$ leads to de Sitter spacetime symmetries, useful to describe an expanding homogeneous and isotropic (empty) universe. In all cases the (Galilean) relativity principle holds, but some absolute properties of spacetime are lost. In this seminar I will discuss some basic conceptual aspects of this approach to relativity and sketch the role of a deformation of relativistic symmetries in terms of an invariant momentum scale proportional to the Planck energy (DSR theories), the typical quantum gravity scale.

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