



Martedì 27 Settembre 2016

Aula Magna del Dipartimento
di Fisica ed Astronomia
ore 15:00

An Apology for AdS3

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The talk will review well known unsolved questions in quantum gravity, such as the need for a completion at high energies and the absence of non-perturbative local observables. It will explain how gravity in three space-time dimension, on the negatively-curved maximally symmetric background called 3D Anti de Sitter space (Ad3), retains some of its most puzzling features in a vastly simplified context. Among the former are the presence of black holes and infinite-dimensional asymptotic symmetries as well as the absence of local observables; among the latter, the absence of local dynamics. I will explain how to use asymptotic symmetries to recover the celebrated Bekenstein-Hawking formula for black hole entropy from a statistical-mechanics type of microstate counting, which uses only very general properties of quantum gravity in AdS3. The last part of the talk will briefly describe certain conceptual aspects of gravity in 3D that require a more technical understanding of the theory.