

Seminar: "Geometry&Physics", DFT
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Location: DFT seminar room (IFIN-HH) Bucharest

Date: Thursday, July 14, 2016, 11:00 AM

Title: **U-folds, section sigma models and fibered supergravity**

Speaker: **Dr. Calin LAZAROIU** (IBS – Center for Geometry and Physics, Pohang, Korea)

Abstract: "I consider a variant of the ordinary four-dimensional sigma model coupled to Abelian gauge fields in which the map describing the scalar fields is replaced by a section of a surjective Lorentzian submersion and the coupling to Abelian gauge fields is described in a duality-invariant manner using a flat symplectic vector bundle defined over the total space of the submersion and endowed with a vertical taming. When the Lorentzian submersion is a fiber bundle (a so-called Kaluza-Klein space), I show that this model is locally indistinguishable from the locally-defined model found in the supergravity literature and hence that it provides an allowed definition of the latter on non-contractible spacetimes. In this case, solutions of the equations of motion of the section sigma model can be interpreted as supergravity U-folds which are locally-geometric. I conjecture that the bosonic sector of any locally-geometric supergravity U-fold can be described globally in this manner and speculate that the classical limit of locally non-geometric U-folds may correspond to section sigma models whose Lorentzian submersions are not fiber bundles."