

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

Date: Thursday, March 21, 2019, 12:00 noon

Title: **Hessian symmetries of multifield cosmological models**

Speaker: **Dr. Calin Lazaroiu** (IBS-CGP, Pohang)

Abstract: "We discuss Noether symmetries of multified scalar cosmological models, showing that they naturally fall into two classes, namely "geometric" and "Hessian" symmetries. While the first are rather obvious, the second have a deeper theory. We show that a multifield cosmological model admits Hessian symmetries iff its scalar manifold is a so-called Hesse manifold. Particular examples of Hesse manifolds are provided by those hyperbolic manifolds whose group of orientation-preserving isometries satisfies certain conditions. Using these results, we give a complete classification of two-field cosmological models admitting Hessian Noether symmetries, showing that they can be described using the classical Weierstrass map. We also sketch how the scalar potentials of such models can be determined using the method of characteristics."