

Seminar: "Geometry&Physics", DFT (IFIN-HH)
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Location: IMAR (in the Geometry group seminar), room 306 C. Banică

Date: Tuesday, June 25, 2019, 10:00 AM

Title: **Hesse manifolds and Hesse functions**

Speaker: **Calin Lazaroiu** (IBS-CGP Pohang & IFIN-HH)

Abstract: "I study Hesse manifolds, defined as those Riemannian manifolds which admit non-trivial functions (called Hesse functions) whose Hessian tensor is proportional to the function through the Riemannian metric. I show that a Riemannian manifold is locally maximally Hesse (i.e. admits a maximally dimensional space of local solutions to the Hesse equation) iff it is real analytic, in which case the manifold is hyperbolic. Moreover, I classify those complete globally Hesse manifolds which are locally maximally Hesse, showing that they coincide with the elementary hyperbolic space forms. I also propose a few problems for further research. Hesse manifolds and Hesse functions appear in the study of Noether symmetries of certain cosmological models containing scalar fields."