

”The Trans-Carpathian Seminar on Geometry & Physics”

(See also the [Geometry & Physics @ DFT](#) seminar homepage)

Date: Wednesday, October 16, 2024, 15:15 Bucharest time

Location: online via Zoom

Speaker: **Prof. Calin Lazaroiu** (IFIN-HH & UNED)

Title: **Consistency conditions and fiducial 2-field models for SRRT inflation**

Abstract: I outline the dynamical consistency conditions for strong rapid turn inflation with sustained slow roll (SRRT) in two-field cosmological models with oriented target surface and their corresponding strict form, which gives a nonlinear first order geometric PDE constraining the scalar field metric and potential of such models. Fixing the conformal structure of the scalar field metric allows one to write this PDE as a contact Hamilton-Jacobi equation defined on the total space of the first jet bundle of the positive determinant half-line bundle of the target manifold (endowed with its Cartan contact structure) and whose contact Hamiltonian is cubic in momenta. This equation can be studied with the method of viscosity solutions. I outline some properties of this equation and illustrate viscosity approximants of a simple Cauchy problem. Solutions of this PDE can be used to build fiducial two-field models which allow for strong SRRT inflation.