Contribution ID: **67** Type: **not specified**

Black holes in string-inspired Euler-Heisenberg theory

Thursday, 10 July 2025 12:10 (20 minutes)

We consider higher-order derivative gauge-field corrections that arise in the fundamental context of dimensional reduction of string theory and Lovelock-inspired gravities and obtain an exact and asymptotically flat black-hole solution, in the presence of nontrivial dilaton configurations. Specifically, by considering the gravitational theory of Euler-Heisenberg nonlinear electrodynamics coupled to a dilaton field with specific coupling functions, we perform an extensive analysis of the characteristics of the black hole, including its geodesics for massive particles, the energy conditions, scalar quasi-normal modes, thermodynamical and stability analysis. The inclusion of a dilaton scalar potential in the action can also give rise to asymptotically (anti-)de Sitter spacetimes and an effective cosmological constant.

Presenter: NAKAS, Theodoros (IBS CTPU-CGA)

Session Classification: Parallel 1