## 10th International Conference on Gravitation and Cosmology: New Horizons and Singularities in Gravity (ICGC 2023)



Contribution ID: 91

Type: Poster

## Thermodynamic behaviour of GUP-corrected black holes in bumblebee gravity

Bumblebee gravity theory is a class of vector-tensor theory of gravity with growing interest in literature. We explore a Schwarzschild-type metric corrected by Generalized Uncertainty Principle (GUP) and possessing topological defects within the framework of Bumblebee Gravity. We investigate the thermodynamic quantities associated with the black hole metric, like temperature, entropy and heat capacity. The effects of the Lorentz Symmetry Breaking parameter (LSB) inherited in bumblebee gravity framework and also the global monopole parameter on the various properties of the black hole are studied. It was found that these parameters of the theory have significant impact on the temperature, entropy as well as on heat capacity, and causes significant variation from ideal Schwarzschild behaviour.

## Email

rs\_ronitkarmakar@dibru.ac.in

## Affiliation

Dibrugarh University

Author: KARMAKAR, Ronit (Dibrugarh University)
Co-author: Prof. GOSWAMI, Umananda Dev (Dibrugarh University)
Presenter: KARMAKAR, Ronit (Dibrugarh University)
Session Classification: Cosmology

Track Classification: Cosmology