



Contribution ID : 28

Type : **Oral talk**

Quartet-metric gravity and scalar graviton dark holes

Friday, 25 October 2024 18:15 (15)

In the framework of the quartet-metric gravity [1] the so called “dark holes” combining a central black hole and a peripheral scalar graviton dark halo are considered. It is shown that the dark holes can quite naturally explain asymptotically flat rotation curves, otherwise explained by presence of dark matter in galaxies. Possibilities of further modification of basic dark hole solutions are discussed, in order to apply them to modeling of realistic cosmic structures.

[1] Yu.F. Pirogov, “Multiscalar-Metric Gravity: Cosmological Constant Screening and Emergence of Massive-Graviton Dark Components of the Universe”, Grav. Cosmol. 28, 263 (2022); arXiv:2105.09897 [gr-qc].

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Session Classification : Gravitation and Cosmology

Track Classification : Gravitation and cosmology