

Vulcano Workshop 2018 - Frontier Objects in Astrophysics and Particle Physics



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Addressing the missing matter problem in galaxies through a new fundamental gravitational radius

We demonstrate that the existence of a Noether symmetry in extended theories of gravity gives rise to a further gravitational radius, besides the standard Schwarzschild one, determining the dynamics at galactic scales. By this feature, it is possible to explain the baryonic Tully-Fisher relation, the rotation curve of gas-rich galaxies, and the features of fundamental plane of ellipticals without the dark matter hypothesis.

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