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Modeling of Charged Compact Star in f (Q) gravity

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This study focuses on constructing physical model of spherically
symmetric systems incorporating electromagnetic fields within the
framework of f (Q) gravity. To achieve this, we derive the field equations corresponding to f (Q) gravity in the
presence of anisotropic matter, and then connect the interior space-time with the exterior Reissner
Nordstrom metric to determine the constants inherent in the model.
In our approach, we adopt an electrical charge distribution characterized by s(r) = Kr3, where K represents
the intensity of the charge to
manifest the charged properties of matter distributions. To ensure the
physical viability of our solution, we rigorously examine the stability
using causality conditions. Subsequently, we apply these developed
model to study certain well-known compact objects, such as LMC X-
4. The analysis involve plotting various physical parameters against
fixed values incorporated in the model, facilitated by computational
software like Mathematica.

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Session Classification: Theories of gravity: alternatives to the cosmological and particle standard
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Track Classification: Alternative Theories (AT): Theories of gravity: alternatives to the cosmological
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