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Emergence of a Black Hole at the Centre of some Galaxies

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Over the last CAP and Theory Canada conferences, we have proposed a conceptual framework to rationalize the use of an erfc potential in a modified Schwarzchild spacetime geometry [1]. Starting from the premise of an interdependence principle interpreted in a Bayesian setting, the linear case of a weak field static symmetric massive object was analyzed to point out how Einstein's equation could be generalized to incorporate a weighting factor that takes into account the probability of presence of a given energy density in its corresponding 4D curved space-time manifold. Using the Central Limit Theorem to model globally the very slow process of star formation and mathematically express the corresponding density, the new framework provides a rationale for the emergence of a weighted Newton's law of gravitation. Although this new metric provides a consistent set of predictions and explanations regarding some open problems in the solar system [2], the residual static offset incorporated in the erfc potential can also be investigated dynamically. This has led to an axisymmetric interpretation of the general metric, the resulting geometry describing any massive body and its curved space-time, subject to a rotation and an expansion. One key feature of this modelling methodology is that it can be applied at different scales and used, for example, to model galaxies formation. In this conference, we show how this can be done and under which condition a black hole will be created at the centre of a galaxy.

[1]Plamondon, R., (2018), General Relativity: an erfc metric, Results in Physics, 9, 456-462.
[2]Plamondon, R., (2017) Solar System Anomalies: Revisiting Hubble's law, Physics Essays, 30(4), 403-411.

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