Enough of the trap of non-existent dark matter.

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Abstract

Since the experimental event of abnormal speeds within galaxies was discovered; the so-called dark matter is incessantly sought. But all the experiments still do not find such a ghost. Its justification is supported, in the apparent, simplest explanation: the existence of a matter additional to the baryonic matter within the galaxies. But there is another possible explanation more natural and just as simple: A modification of the gravity due to the occurrence of effects of quantum gravity produced by the repulsive acceleration of the vacuum. A repulsion of the vacuum would produce, as we demonstrated with the experiments with magnets of equal polarity, a pressure towards the center of mass and, therefore, a fictitious increase in mass. In this short article; we calculate the average speed of rotation within the newly discovered ultradiffuse galaxy NGC1052-DF2. This calculation shows that the equation, type MOND, agrees perfectly with the estimated velocities. Therefore, some voices that too quickly have announced that this galaxy (almost without dark matter or anything of it) does not agree with the theories of modified gravitation (we refer to the quantum gravitation that would quantize the equations of Einstein's gravitation, or GR); they are simply avoiding the real explanation: effects of quantum gravity produced by the vacuum (very large masses of galaxies).

Introduction.

We will refer directly to the summary of the article published in nature and in arxiv, as the best way to start exposing the experimental finding; to then apply our theoretical equation that can be found theoretically deduced in the bibliography of this article (bibliography of some of our previous articles).

"Studies of galaxy surveys in the context of the cold dark matter paradigm have shown that the mass of the dark matter halo and the total stellar mass are coupled through a function that varies smoothly

with mass. Their average ratio Mhalo/Mstars has a minimum of about 30 for galaxies with stellar masses near that of the Milky Way (approximately 5×10^{10} solar masses) and increases both towards lower masses and towards higher masses 1,2. The scatter in this relation is not well known; it is generally thought to be less than a factor of two for massive galaxies but much larger for dwarf galaxies 3,4. Here we report the radial velocities of ten luminous globular-cluster-like objects in the ultra-diffuse galaxy 5 NGC1052–DF2, which has a stellar mass of approximately 2×10^{10} solar masses. *We infer that its velocity dispersion is less than 10.5 kilometres per second with 90 per cent confidence*, and we determine from this that its total mass within a radius of 7.6 kiloparsecs is less than 3.4×10^{10} solar masses. This implies that the ratio Mhalo/Mstars is of order unity (and consistent with zero), a factor of at least 400 lower than expected2. NGC1052–DF2 demonstrates that dark matter is not always coupled with baryonic matter on galactic scales."

A galaxy lacking dark matter

Calculation of the average speed of rotation in the galaxy NGC1052-DF2.

$H = Hubble - Constant$, a_0 = constant repulsive vacuum acceleration = $6.911519372842 \cdot 10^{-10}\, m/s^2$

$a_0 = H \cdot c$

$M(NGC1052\text{–}DF2) = Mass\ of\ the\ galaxy\ NGC1052 - DF2 = 2 \cdot 10^8 \times 1.9885 \times 10^{30} Kg$

$\overline{v_r}(NGC1052\text{–}DF2) = average\ speed\ of\ rotation$

$2 \cdot \ln \left(M(NGC1052\text{–}DF2)/m_{PK} \right) = Entropy$
$m_{PK} = Planck\ mass$

$$\overline{v_r}(NGC1052\text{–}DF2) = \sqrt[4]{\frac{M(NGC1052\text{–}DF2) \cdot a_0 \cdot G_N}{2 \cdot \ln \left(M(NGC1052\text{–}DF2)/m_{PK} \right)}} = 17.1302252 Km/s$$

The previous equation could be modified by a reduction correction factor $(\approx \varphi)$; that possibly would depend, among other factors, on the shape of the galaxy.

$\varphi = \frac{\sqrt{5}+1}{2}$

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