Dark matter is a misconception

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Dark matter is a misconception. It was invented because the velocity of the stars in a disc galaxy doesn't match with the Kepler law. However, that law is only valid for systems with a large central object and few orbiting objects.

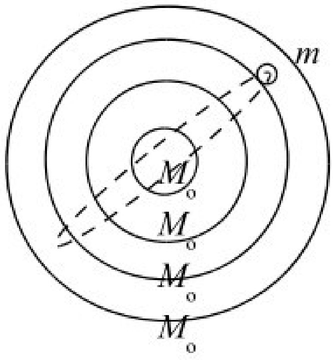
If one compares a spherical galaxy with the same galaxy, become a disc galaxy, one can remark that the gravity distribution is totally different. The simple Newton law is valid in both cases, but one should split-up each case in tinier parts, and integrate the parts afterwards.

Below is the simplified version (excerpt of my paper), where the galaxies are split-up into a few concentric parts only. By comparing the gravity distribution of the spherical galaxy with the one of the disc galaxy after having its orbits swiveled, it appears that the speed of the stars becomes nearly constant.

And for the Milky Way, I come precisely to the correct value of the speed of our Solar system.

Calculation of the constant velocity of the stars around the bulge of plane galaxies

Let's take the spherical galaxy again with a rotary centre (fig. 6.2). The distribution of the mass is such, that a star only feels the gravitation of the centre. We consider equal masses M_o (mass of the centre, named "the bulge") in various concentric hollow spheres according to some function of R (it must not be linear). We take the total bulge as the centre mass because that part does not collapse into a disk, and so, it has to be considered as part of the rotary centre of the galaxy. Possibly, the orbit can be disturbed by the passage of other stars, but in general one can say that only the centre M_o has an influence according to:



$$F_R = G\frac{M_0\, m}{R^2} \qquad \text{and} \qquad F_C = \frac{m v_R^2}{R} \qquad (6.3)\ (6.4)$$

fig. 6.2

So, $$F_R = F_C \quad \Rightarrow \quad v_R^2 = \frac{G M_0}{R} \qquad (6.5)$$

When the angular collapse of the stars is done, creating a disc around the bulge, the following effect occurs: the mass which before took the volume (4/3) π R^3, will now be compressed in a volume π R^2 h where h is the height of the disc, that is a fraction of the diameter of the initial sphere (fig. 6.3).

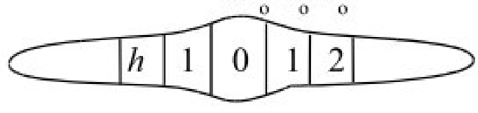


fig. 6.3

And at the distance R, a star feels more gravitation than the one generated by the mass M_o.

To a distance $k.R_o$ the star will be submitted to the influence of about $n.M_o$, where k and n are supposed to be linear functions passing through zero in the centre of the bulge.

Strong simplified, this gives for the total mass according to the distance R:

$$v_{r_2}^2 = \frac{G\, n\, M_0}{k\, R_o} \qquad (6.6)$$

Therefore, one can conclude that : $\boxed{v_{r2} = \text{constant}}$

Concerning the centre, zone zero, one cannot say much. Let's not forget that a part of the angular momentum has been transmitted to the disc, and that the centre is not a point but a zone.

For zone one, we can say that the function of the forces of gravitomagnetism must be somewhere between the one of the initial sphere and the zone 2.

Example : calculation of the stars' velocity of the Milky Way

These findings are completely compatible with the measured values.
The diagram shows a typical example, which shows the velocities of stars for our Milky Way.

Using equation (6.6) for our Milky Way, with the reasonable estimate of a bulge diameter of 10000 light years having a mass of 20 billion of solar masses (10% of the total galaxy), and admitting that k = n we get a quite correct orbital velocity of 240 km/s (fig. 6.4).

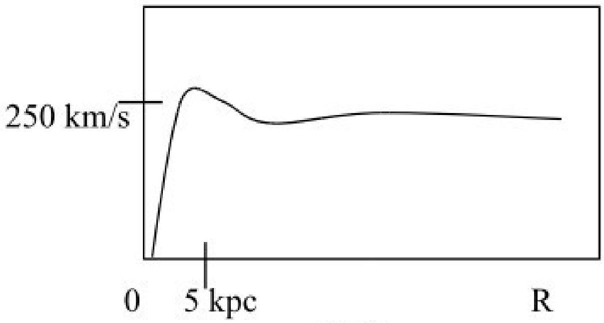


fig. 6.4

This deduction proves that by using Newtonian gravity, disc galaxies obtain a correct fit with observation. Hence, dark matter doesn't exist.