Dark matter: not essential for rotation curve

W. Westenberger

SUMMARY.
You will get the horizontal rotation curve of spiral galaxies and the increasing rotation curve of small galaxies respectively by using the well-known features of normal baryonic matter. There is no need for any speculative matter or other unknown.

INTRODUCTION.
Rotation curve of solar system is decreasing corresponding to Kepler's law of planetary motion. Therefore the velocity of Jupiter is less than half of Earth's velocity.
Observations of bright galaxies result in rather horizontal rotation curves.
In contrast the rotation curves of less bright galaxies are increasing towards the edge. (Less bright small galaxies have got less mass in their centres.)
Up to now additional non-visible non-baryonic dark matter is supposed to be needed for explaining the galactical rotation curves. [1]
Masses will exert gravitational force according to Newton's gravitation law.
Several masses in the same direction will exert gravitation by addition of forces.
Equal masses in opposite direction will extinguish the gravity of each other in the symmetric point.

IMAGINARY SIMULATION. SIMPLE NUMERIC SIMULATION.
Imagine there is a homogeneous disc of gravitational masses.
Because of the homogeneous and symmetric distribution of masses you will find for each mass another mass opposite to the centre at a symmetric position. The gravitational force of both masses will extinguish the gravity of each other in the very centre of the disc. Because of this counteraction gravitational force of zero will exert on a mass in the centre.
Removing a mass object from the centre, gravity will increase. All masses that are symmetrically distributed on behalf of the new position of this mass will extinguish the gravity of each other. But some masses at the opposite edge of the disc do not find any counterbalance on behalf of the removed mass as a symmetric point. So an area of distant masses shaped like the beginning crescent moon will exert gravitation on the removed mass. Removing this mass continuing towards the edge, the area of not extinguished gravitation will increase. The local effective gravitation on the removed mass will get maximum amount at the very edge of the disc.
Summing up we get increasing gravitation curve from the centre to the edge. Because local gravity is corresponding to velocity of an orbiting object you see here also the rotation curve, shaped very similar to the rotation curve of a less bright small galaxy.

Imagine you add a heavy mass into the very centre of the homogeneous disc. The gravitational force of this mass will decrease proportional to the square of distance corresponding to Newton's gravitation law.
Now we are removing another mass from the centre towards the edge. Near the centre there is little gravitation due to the homogeneous disc and high gravitation due to the heavy centre. Starting at a certain radius decreasing central gravitation is compensated by increasing disc gravitation and you will get a continuing rather horizontal gravitation curve. Resulting in a horizontal rotation curve.

DISCUSSION.

Lets regard the distribution of matter within a spiral galaxy, for example our Milky Way.
We have got a central mass within the bulge and rather homogeneous mass distribution within the galactical disc. Knowing the total mass of the bulge (about 10 billions of solar units) and the mass density of the disc (about 90 solar units within a radius of 5 parsec around the sun) it is shown that the gravitation curve as well as the rotation curve of the Galaxy is horizontal at a range from 15,000 to 45,000 ly from the galactical centre. [2]

Presupposing decreasing density by increasing radius the rotation curve also may be horizontal. [3]
Computer simulations in greater detail will check the correctness of this result.

Taking into consideration the non visible halo of normal baryonic matter around the Galaxy rotation curve will not even decrease beyond the edge of the visible disc. [3]

Normal baryonic matter serves as a basis for all calculations. The results are corresponding to observations and reality. There is no need for any speculative matter or other unknown.

Also recent GRAIL satellite experiments do not bear out the dark matter assumption. [4]

REFERENCES:

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[3] Westenberger W 2012 Dark matter: Dunkle Materie? 1. Ergänzung
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[4] Westenberger W 2013 Dark matter: disproved by GRAIL
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