

Does dark matter really exist?

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Dark matter is the subject of controversy today, pitting particle theory against gravitation. In this brief work, applying the theory of differential equations, an alternative hypothesis is given to dark matter that would explain the anomalies observed in the movement of distant galaxies without having to revise the Standard Model of particles.

The anomalous movement of some distant galaxies, and the impossibility of explaining it by the current results of physics have led astronomers to hypothesize the probable existence of a matter that does not reflect light and that therefore we do not detect by observation but that does have mass, we must also admit that this dark matter would be found in large proportions in the universe.

The problem arises when we try to detect particles of that matter in experiments here on earth. Until the time of the preparation of this work, no conclusive indications have been found in the experiments that have been carried out and are being carried out of any particle that can be considered dark matter and these particles have been searched in a wide spectrum of mass-energy.

In addition, the theoretical model, which successfully explains the elementary particles known and found so far, the Standard Model, does not predict any dark matter particles.

The motion of galaxies through partial solutions of a gravitational differential equation applied to a galaxy can be, at large distances from space-time, very different from a similar one if it has been affected by a small difference in its initial conditions and the right circumstances exist for a "butterfly effect" to occur, known and studied due to the development of differential equations and the calculation of their partial solutions by computer.

Small variations in the initial conditions can lead to large differences in the behavior of the partial solution at great distances, so anomalous behaviors of some galaxies can be expected without having to resort to the dark matter hypothesis as the only way to explain it.

A butterfly effect in some partial solutions of relativistic differential equation applied to these galaxies could qualitatively explain these anomalies observed in their position without the need to resort to dark matter and thus keep the Standard Model valid.

Nothing more, thanks for reading it