Dark Matter and Dark Energy Found*

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(comments welcome)

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Abstract

The Reality-Sucks theory can compute both, the dark matter and the dark energy, in the required range. The ratio between dark and ordinary matter is estimated between 83.0 % and 85.7 %. Dark matter and dark energy together constitute between 94.4 % and 95.8 % of the total mass-energy content. Similar results should be obtained using the Λ-CDM model.

Contents

1 Introduction

The Λ-CDM model ([1]) is frequently referred to as the standard model of Big Bang cosmology, because it is the simplest model that provides a reasonably good account of most observed properties of the cosmos. It includes an expansion of metric space and proposes dark matter in order to account for gravitational effects observed in very large-scale structures. Dark matter is thought to be collisionless and interacts with each other and other particles only through gravity and possibly the weak force. It is dissipationless and can not radiate photons. Thus, it is not directly observeable.

In this article it is proposed, that dark matter (and dark energy) is virtual, due to the effects of the space expansion. The computations are done with the Reality-Sucks theory ([2]), which is much easier.

2 Reality-Sucks Theory

The Reality-Sucks theory ([2]) already expects *every* dimension to be variable in time, not only mass. We have a common progression in time $\phi(t)$ asumed as

$$\phi(t) = \sqrt{\frac{1+r_t}{1-r_t}} \tag{1}$$

with the relative time $r_t = t/c_t$ and the time horizon c_t. The progression of any dimension is related to $\phi(t)$. Velocities progress with $V(t) = \phi(t)$, masses with $M(t) = \sqrt{phi(t)}$ and distances with $X(t) = \sqrt{1/phi(t)^3}$. The asumption of dark matter comes from oberserved differences of the behaviour of galaxies and the gravitational law. Beside mass, the gravitation law uses the distance of the objects, which seemed to be used as observed (which is wrong in an expanding universe, see section 3). In the calculation of dark matter, this must be taken into account. Since the gravitational force is linear to $F_G \sim m^2/r^2$, we asume a total progress of the mass as

$$\begin{aligned}\phi_{m,x}(t) &= \frac{M(t)}{X(t)}\\ &= \frac{\sqrt{phi(t)}}{\sqrt{1/phi(t)^3}}\\ &= \phi(t)^2\\ &= \frac{1+r_t}{1-r_t}\end{aligned} \tag{2}$$

to calculate the ratio of dark matter. If we asume a homogenous distribution of matter, the average mass $\overline{m}$ up to the distance at relative time r_t will become

$$\begin{aligned}\overline{m} &= \frac{\int_0^{r_t} \phi_{m,x}(t)\,dt}{\int_0^{r_t} dt}\\ &= \frac{\int_0^{r_t} \frac{1+r_t}{1-r_t}\,dt}{r_t}\end{aligned} \tag{3}$$

The problem is the definition of the upper limit of the integral. It must be less than 1. According to [4] the universe is $13.8 \cdot 10^9$ years old. The first stars and galaxies formed about $0.2 \cdot 10^9$ to $0.5 \cdot 10^9$ years after the initial stage. Dark matter can only be observed, when at least stars where formed. Before, it might exist, but can not be observed. We can asume an upper limit between $(13.8-0.5)/13.8 \approx 0.964$ and $(13.8-0.2)/13.8 \approx 0.986$.

Using this limits we obtain a result between $\overline{m} = 5.896$ and $\overline{m} = 6.984$ (calculated numerical). In both cases the ordinary matter stays 1. The ratio of the dark matter is $\Delta_{matter} = (\overline{m}-1)/\overline{m}$, i. e., between 0.830 and 0.857.

The progress of energies $E(t) = \sqrt{\phi(t)^5}$ ([2]) yields the dark energy. The average energy $\overline{E}$ is

$$\begin{aligned}\overline{E} &= \frac{\int_0^{r_t} E(t)^{5/2}\,dt}{\int_0^{r_t} dt}\\ &= \frac{\int_0^{r_t} (\frac{1+r_t}{1-r_t})^{5/4}\,dt}{r_t}\end{aligned} \tag{4}$$

The average energy is between $\overline{E} = 10.961$ and $\overline{E} = 16.533$ (computated numerical). Here the source seems to be incompete. It states, that the total mass-energy content of the universe contains 5 % ordinary matter, 26.8 % dark matter, and 68.2 % of a form of energy known as dark energy. Dark energy and dark matter should constitute 95 % of the total mass-energy content. But there is no room for ordinary energy in this statements. If we asume, that the ration of dark energy contains ordinary energy, too, we get a ration of the "dark" forms of $\Delta_{dark} = (\overline{m}+\overline{E}-1)/(\overline{m}+\overline{E})$ between $\Delta_{dark} = 0.944$ and $\Delta_{dark} = 0.958$. The ratio of (dark) energy of the total mass-energy content is $\Delta_E = \overline{E}/(\overline{m}+\overline{E})$ between $\Delta_E = 0.613$ and $\Delta_E = 0.703$, of dark matter $\Delta_d = (\overline{m}-1)/(\overline{m}+\overline{E})$ between $\Delta_d = 0.254$ and $\Delta_d = 0.330$ and of ordinary matter $\Delta_m = 1/(\overline{m}+\overline{E})$ between $\Delta_m = 0.042$ and $\Delta_m = 0.056$.

3 Λ-CDM Model

The Λ-CDM model seems to miss the effects, the proposed expansion of the universe has. The law of gravity can not be applied directly with the observed distances. The (virtual) expansion of the univeserse effects, that the distances between objects are expanded. This observed expansion must be corrected before.

Something similar is already done with the distance measurement based on redshifts. The observed expansion of wave length (a distance) is used to estimate the distances of astronomical objects, but seems not to be considered, here. The effect on all other distances must be identical. The universe expands in all directions.

While we are speaking about inconsequent asumptions: If the space expands, either the time must expand like the space or the vacuum light speed must vary in time. Leaving both constant results in a different space-time. Or you switch to the Reality-Sucks theory, where all dimensions vary in time according to quantum-theoretical results.

The second effect, which seems to be missing, is, that the (virtual) expansion of the universe adds (virtual) energy. The added energy is the dark energy in the Λ-CDM model.

Both effects should yield similar results as in section 2. At this point, i do not understand science, anymore. We already have a satisfying mathematical model of the solar system, which leaves no room for the asumption of "real dark" matter. If you asume "real dark" matter, the model must be rewritten. Isn't it obvious, that it must be virtual?

Or you state, that the "dark" mater is destroyed by some process and does not exist, anymore. What is the difference between a virtual matter and a pure fictional matter, which can no longer be observed? You will have problems describing the destoying process, because you have no "dark" matter to experiment with. It *can not* be real but *must* be virtual.

Because of the expansion of the universe, the observations of time and space are distorted in the Λ-CDM model. This asumption is identical to the Reality-Sucks theory. The difference is, that the Λ-CDM model restricts the distortion to distances (and should extend it to time), while the Reality-Sucks theory asumes a distorted observation for every dimension different, using quantum-theoretical results to define the relations of the progress of the dimensions.

4 Conclusion

Both, the dark matter and the dark energy, can be easily constituted in the required range, if we expect distorted observations. This seems to be missing in the Λ-CDM model. The Reality-Sucks theory is easier for this effect.

References

[1] Wikipedia article on the Λ-CDM model (retrieved 2023-01-12).

[2] SVEN GOHLKE: *About the Description of Nature*, `https://vixra.org/abs/2211.0084` (retrieved 2023-01-12).

[3] Wikipedia article on dark matter (retrieved 2023-01-12).

[4] Wikipedia article on the chronology of the universe, section "The early universe" (retrieved 2023-01-12).