

Reinterpretation of Dark Energy

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January 13, 2022

Keywords: Age of the Universe, Cosmological constant, Dark energy, Dark matter, Hubble constant

Abstract The universe is composed of ordinary matter 4.9%, dark matter 26.2%, and dark energy 68.9%. However, when interpreting the whole universe, ordinary matter should be excluded. That is, dark matter 27.5% and dark energy 72.5% should be only applied. From this, all values of the whole universe are reinterpreted.

1. Introduction

Ordinary matter affects the inner universe. When interpreting the whole universe, ordinary matter should be excluded.

2. 3D plat universe VS. 4D sphere universe

2.1 2D plat earth VS. 3D spherical earth

In Fig.1, (a) is 2D flat earth, and (b) is 3D spherical earth. The right answer is absolutely (b). However, relatively (a) is also the answer.

2.2 Mass of earth

Regardless of how large or small the mass of earth is, the shape of earth is absolutely spherical.

2.3 Mass of universe

Regardless of how large or small the mass of universe is, the shape of universe is absolutely spherical.

2.4 Einstein's equation

The shape of (a) is relatively correct, and the shape of (b) is absolutely correct. Einstein's equation is an interpretation of relativity universe such as (a). In order to interpret the absolute universe, it is necessary to observe from outside of the universe such as (b). However, physics cannot escape from

relative (a).

2.5 Relative time and Absolute time

In (a), time is relatively determined from 0h to 24h. However, in (b), the relative time is meaningless. In 3D universe, space-time changes are relative. Absolute time is in the 4D direction, and the change is the expansion of the universe. That is, the expansion of the universe absolutely occurs, and absolute time must be applied. Relative time occurs in 3D space, and absolute time is in the 4D direction.

3. Reinterpretation

3.1 Ordinary matter

The upper part of Table 1 is the values suggested by physics, and the lower part is the values reinterpreted by author. From the viewpoint of (a), the shape of earth is curved depending on what earth's mass is. From the viewpoint of (b), the shape of earth is absolutely spherical, regardless of earth's mass. As such, if the shape of universe is (a), the amount of ordinary matter is very important, but if it is (b), ordinary matter is not considered. Therefore, when interpreting the whole universe, ordinary matter should not be considered such as the lower part of Table 1.

Is the 4.9% of ordinary matter a measured value? Or is it a calculated value? If it is a measured value, what are the measured values of dark matter and dark energy? If it is a calculated value, it must be proven that the calculation formula is absolutely correct. Einstein's formula is relatively correct such as (a), not absolutely correct such as (b).

3.2 Dark energy

The dark energy values of physics are presented at the upper part of Table 1 and Fig. 2, and the reinterpreted dark energy values are presented at the lower part of Table 1 and Fig. 3. In Table 1, there are many conditions such as lensing, WP, HighL, BAO, lowP, ext, lowE. In Fig. 1, the horizontal



(a) 2D plat (b) 3D sphere
Fig. 1 Shape of earth

Table 1 Physics values and reinterpretation values

Term	2013 Planck results						2015 Planck results			2018 Planck results			MQHC
	Planck	Planck	Planck	Planck	Planck	Planck	TT,TE,EE	TT,TE,EE	TT,TE,EE	TT,TE,EE	TT,TE,EE	TT,TE,EE	
Condition	-	lensing	WP	WP	lensing	WP	lowP	lowP	lowP	lowE	lowE	lowE	
	-	-	-	HighL	WP	HighL	-	lensing	lensing	-	lensing	lensing	
	-	-	-	-	HighL	BAO	-	-	ext	-	-	BAO	
Numbers	1	2	2	3	4	4	2	3	4	2	3	4	
<i>Physics values</i>													
Ordinary M.	4.89%	4.83%	4.89%	4.90%	4.84%	4.84%	4.94%	4.91%	4.88%	4.97%	4.95%	4.92%	
Dark Matter	26.51%	25.87%	26.61%	26.60%	25.86%	25.96%	26.62%	26.30%	26.01%	26.69%	26.58%	26.19%	
Dark Energy	68.60%	69.30%	68.50%	68.50%	69.30%	69.20%	68.44%	68.79%	69.11%	68.34%	68.47%	68.89%	
Hubble C.	67.40	67.90	67.30	67.30	67.90	67.80	67.27	67.51	67.74	67.27	67.36	67.66	
Age of universe	13.813	13.796	13.817	13.813	13.794	13.798	13.813	13.807	13.799	13.800	13.797	13.787	
Cosmological C.	1.0925	1.1201	1.0877	1.0877	1.1201	1.1152	1.0858	1.0991	1.1118	1.0842	1.0892	1.1056	
<i>Reinterpretation values</i>													
Ordinary M.	-	-	-	-	-	-	-	-	-	-	-	-	
Dark Matter	27.87%	27.18%	27.98%	27.97%	27.18%	27.28%	28.00%	27.66%	27.34%	28.09%	27.96%	27.54%	27.08%
Dark Energy	72.13%	72.82%	72.02%	72.03%	72.82%	72.72%	72.00%	72.34%	72.66%	71.91%	72.04%	72.46%	72.92%
Hubble C.	70.87	71.35	70.76	70.77	71.35	71.25	70.77	70.99	71.22	70.79	70.87	71.16	71.23
Age of universe	13.798	13.705	13.818	13.817	13.704	13.724	13.817	13.773	13.730	13.814	13.797	13.741	13.728
Cosmological C.	1.2699	1.2996	1.2644	1.2646	1.2997	1.2942	1.2641	1.2782	1.2919	1.2632	1.2685	1.2863	1.1150

axis is the number of conditions.

It would be reasonable to assume that as the number of conditions increases, the calculated value will be correct. In Fig. 2 and 3, it is shown that as the number of conditions increases, the dark energy value also increases. Is this a coincidence? Or is it inevitable? According to the author's calculations, dark energy is 72.92% [1]. This means that a fifth certain condition in Table 1 exists.

3.3 Hubble constant

The latest value of the Hubble constant is 67.66 km/s/Mpc, and author's calculation is 71.23 km/s/Mpc [1]. The value of $67.66 \times 72.46\% / 68.89\%$ is 72.46, which is almost similar to the 71.23 calculated by author. Is the universe accelerating velocity expansion or constant velocity expansion? If the universe is interpreted as Fig. 1(a), it is an accelerated expansion, and if it is interpreted as Fig. 1(b), it is a constant velocity expansion.

Fig. 4 and 5 shows the Hubble constant values according to the number of conditions. The value of 71.23 calculated by author is almost in agreement with the four conditions of physics. This means that the fifth condition has nothing to do with Hubble constant.

3.4 Age of the universe

The reciprocal of the Hubble constant is the age of the universe. Author's calculation is 13.728 billion years [1]. Is the age of the universe about 13.8 billion years relative time? Or is it absolute time?

3.5 Cosmological constant

Cosmological constant is calculated from dark energy and Hubble constant. Author's calculation is $1.1150E-52/m^2$ [1]. In Fig. 6, author's calculated values coincide with those of physics. It does not match the reinterpreted in Fig. 7. This reason is that the formula of cosmological constant is derived from ordinary matter. Since ordinary matter does not affect the shape of the universe, the formula for calculating the cosmological constant must be changed newly.

4. Conclusions

Ordinary matter has no effect on the whole universe, and absolute time must be applied to the expansion of the universe. Therefore, everything must be newly reinterpreted.

References

- [1] D. Kim, 2021, Theory of Everything and Logarithmic Elliptic Equation, <https://vixra.org/pdf/2110.0023v1.pdf> pp. 24, 44, and 58.

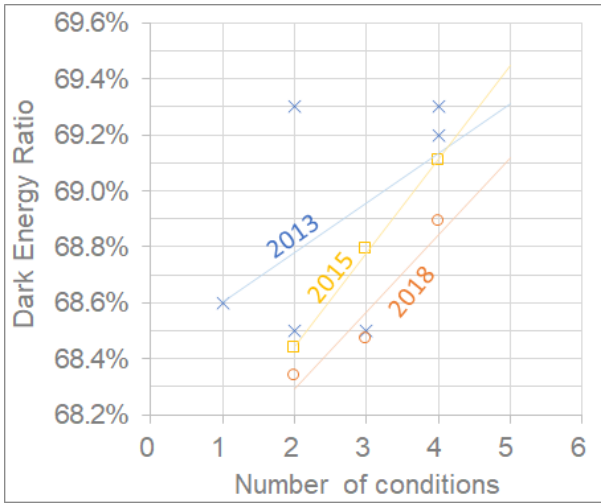


Fig. 2 Dark energy of physics

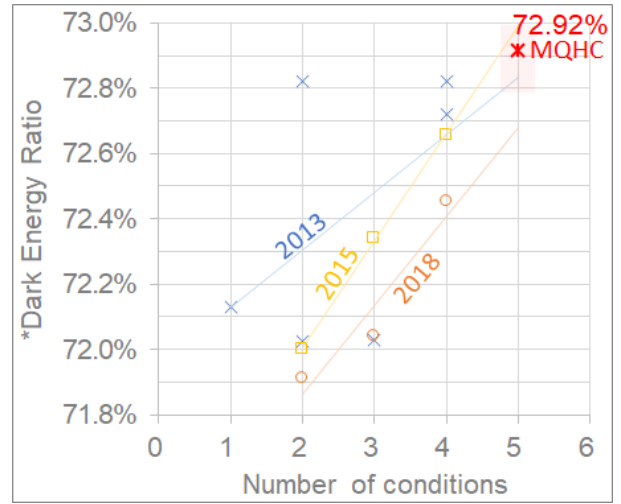


Fig. 3 Dark energy reinterpreted

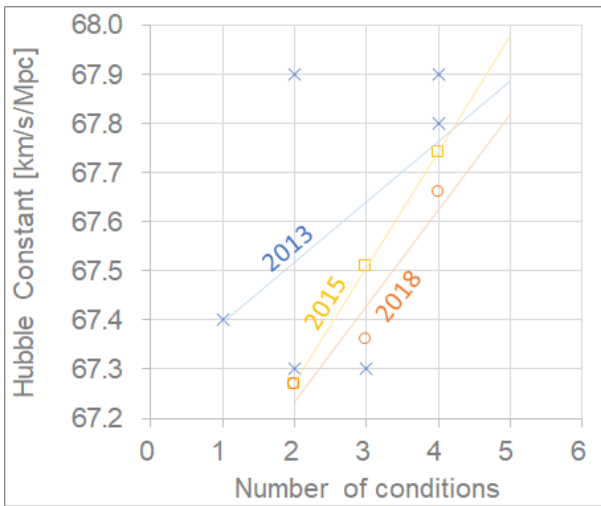


Fig. 4 Hubble constant of physics

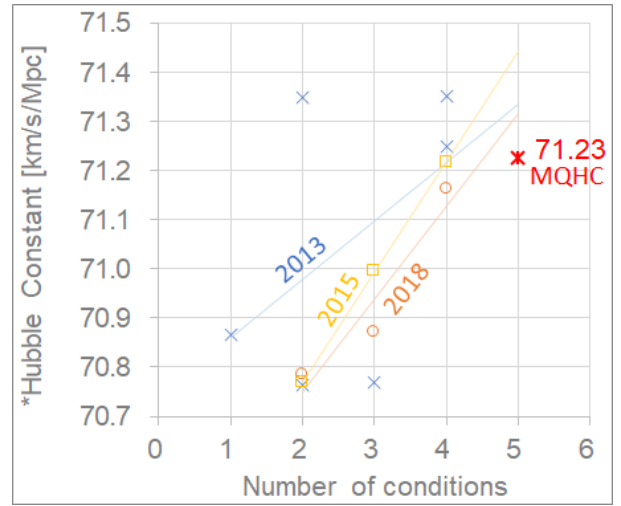


Fig. 5 Hubble constant reinterpreted

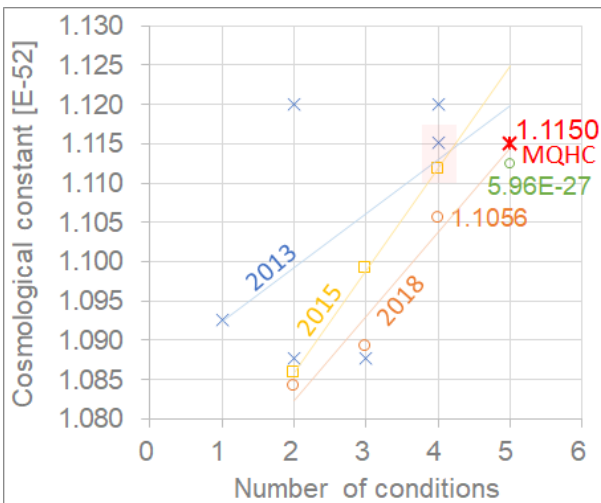


Fig. 6 Cosmological constant of physics

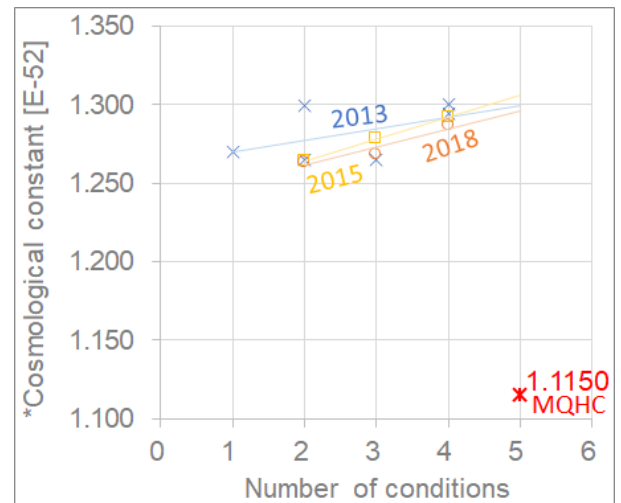


Fig. 7 Cosmological constant reinterpreted