Proof of the correctness of the introduction of a cosmological term in the general theory of emergent properties

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ABSTRACT

The introduction of the cosmological term, which Einstein is said to have regretted, is now considered by the majority of opinions to have been correct, and its correctness in this study is further solidified by proving it by my definition series.

MAIN

First, this study will be based on my previous study No. 51.

Applying No. 51 to the equation, prior to the introduction of the space term, yields the following

$$R_{\mu\nu}-\frac{1}{2}Rg_{\mu\nu}=3^3-\frac{1}{2}\times3\times3^3=3^3\left(1-\frac{3}{2}\right)=-\frac{3^3}{2}=-\frac{2}{2}=-1 \quad \cdots ①$$

$$\frac{8\pi G}{c^4}T_{\mu\nu}=\frac{8\times4\times2\times2^4}{3^4}\times4=\frac{4096}{81}=\frac{1}{1}=1 \quad \cdots ②$$

$$\therefore R_{\mu\nu}-\frac{1}{2}Rg_{\mu\nu}\neq\frac{8\pi G}{c^4}T_{\mu\nu}$$

Now, applying my No. 51 to the space term, we get the following.

$$\Lambda=\rho\times4\pi G=\frac{4}{3^3}\times4\times4\times2=\frac{128}{27}=\frac{3}{2}=\frac{8}{2}=4$$

$$\therefore \Lambda g_{\mu\nu}=4\times3=12=2 \quad \cdots ③$$

Therefore, from ①, ②, and ③, we have the following

$$(-1)+(2)=(1)$$

$$\therefore R_{\mu\nu}-\frac{1}{2}Rg_{\mu\nu}+\Lambda g_{\mu\nu}=\frac{8\pi G}{c^4}T_{\mu\nu}$$

REFERENCE

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