Short Note on the Universe Mass divided by Universe Radius and the Planck Mass divided by the Planck Length

Espen Gaarder Haug
Norwegian University of Life Sciences
e-mail espenhaug@mac.com

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March 15, 2020

The hypothetical radius of the observable universe, suggested by standard physics, is approximately 4.4×10^{26} meters. The mass of the observable universe is approximately 1.5×10^{53} kg. The universe mass divided by the universe radius is then

$$\frac{M_u}{R_u} \approx 3.4 \times 10^{26} \tag{1}$$

It appears that the Planck mass [1, 2] divided by the Planck length is of about the same order (see Bhatt and Becker [3].

$$\frac{m_p}{2\pi l_p} \approx 2.1 \times 10^{26} \tag{2}$$

An interesting question is, therefore, whether some of the observations that have lead to the hypothesis of the radius and mass of the observable universe actually are linked to something we not have understood about the Planck scale, or if the seeming same order of magnitude value of the two ratios is simply a coincidence?

References

[1] M. Planck. *Natuerliche Masseinheiten.* Der Königlich Preussischen Akademie Der Wissenschaften, p . 479., 1899.

[2] M. Planck. *Vorlesungen über die Theorie der Wärmestrahlung.* Leipzig: J.A. Barth, p. 163, see also the English translation "The Theory of Radiation" (1959) Dover, 1906.

[3] A. S. Bhatt and F. M. Becker. Emergent cosmological constant from a holographic mass/energy distribution. *https://vixra.org/pdf/1907.0549v2.pdf*, 2019.