

## With Speed of Expanding Universe to Beauty

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**Abstract:** The difference between the golden ratio and the hyperbolic-elliptic unit being expressed on the most favourable discrete surface has been discussed.

**Keywords:** Golden ratio, hyperbolic – elliptic unit, most favourable discrete surface

### 1. INTRODUCTION

The purpose of this paper is to bridge the mild difference between the golden ratio and the hyperbolic-elliptic unit on the most favourable discrete surface [1].

### 2. THE SIMILARITY OF THE GOLDEN RATIO AND THE HYPERBOLIC-ELLIPTIC UNIT ON THE MOST FAVOURABLE DISCRETE SURFACE

The hyperbolic-elliptic unit being expressed on the most favourable discrete surface  $s_{discrete}(1)$ , only on the fourth decimal differs from the golden ratio  $\phi$ . Since for

$$\frac{s_{discrete}(1)}{1} = 2 - \frac{1}{\sqrt{1 + \pi_{favourable}^2}} = 2 - \frac{1}{\sqrt{1 + (1 + \sqrt{2})^2}} = 1,617\ 316\ 567\ 634\ 910\ 228 \dots \quad (1)$$

And

$$\phi = \frac{1 + \sqrt{5}}{2} = 1,618\ 033\ 988\ 749\ 894\ 848 \dots \quad (2)$$

The next difference  $\Delta$  is given:

$$\Delta = \phi - s_{discrete}(1) = \frac{1 + \sqrt{5}}{2} + \frac{1}{\sqrt{4 + 2\sqrt{2}}} - 2 = 0,000\ 717\ 421\ 114\ 984\ 619\ 933 \dots \quad (3)$$

### 3. POSSIBLE BRIDGE OF THE DIFFERENCE BETWEEN GOLDEN RATIO AND THE HYPERBOLIC-ELLIPTIC UNIT ON THE MOST FAVOURABLE DISCRETE SURFACE

The difference  $\Delta$  between the golden ratio and the hyperbolic-elliptic unit expressed on the most favourable discrete surface (3) could be overpassed with the help of expanding the concerned unit for  $\frac{\Delta}{3}$  in each dimension of 3-dimensional space. For the spinning matter at the luminal speed  $c$  this could be done with the help of speed of expanding universe  $\frac{\Delta}{3}c$ . If so, the next exact speed of expanding universe can be offered:

$$v_{expanding\ universe} = \frac{\Delta}{3}c = \frac{\frac{1 + \sqrt{5}}{2} + \frac{1}{\sqrt{4 + 2\sqrt{2}}} - 2}{3} c. \quad (4a)$$

What applying  $c = 299\ 792\ 458 \frac{m}{s}$  yields

$$v_{expanding\ universe} = 71,692 \frac{km}{s}. \quad (4b)$$

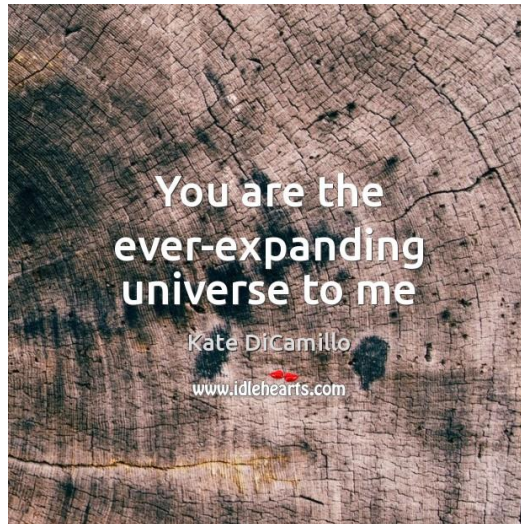
The speculated value is in accordance with a recent measurement of the Hubble constant  $H_0$  from surface brightness fluctuation (SBF) resulting  $H_0 = 73,3 \pm 0,7 \pm 2,4 \text{ km s}^{-1} \text{ Mpc}^{-1}$  where the error bars reflect the statistical and systematic uncertainties [2].

#### 4. CONCLUSION

The mild deviation of the golden ratio from the hyperbolic-elliptic unit being expressed on the most favourable discrete surface offers the prediction of speed of the expanding universe which is in agreement with a recent measurement of the Hubble constant.

#### DEDICATION

To Kate DiCamillo and her quote



**Figure1.** *The ever-expanding universe [3]*

#### REFERENCES

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- [2] John P. Blakeslee, Joseph B. Jensen, Chung-Pei Ma, Peter A. Milne, Jenny E. Greene. *The Hubble Constant from Infrared Surface Brightness Fluctuation Distances. The Astrophysical Journal*, 2021
- [3] <https://www.idlehearts.com/870448/you-are-the-ever-expanding-universe-to-me>

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