

Solution For The Crises In Cosmology

Author: ing. Dan C. M. Visser^[1]

Date: July 6 2020

Abstract.

In reaction on the debate about the crises in cosmology, held at the Kavli Institute California USA, I bring forward to Dr. Adam Riess (John Hopkins University) a proposal, which exactly connects to the result of HOLiCOW measurements of a cosmological constant of 73.3 km/s/Mpc.

Proposal for solution.

The debate refers tot the six different present-day measured cosmological constants H_0 compared to two early-universe measured H_0 . (referring to an article in Quanta Magazine^[2]).

The main-issue in my proposal is based firstly on replacing the Planckborder by a Hologram Tensor and secondly (thereto) dismissing the classical Big Bang universe as a fundamental universe.

So, based on these two ingredients this proposal emerges a new cosmological model to understand these differences. I called that new model the RTHU, an abbreviation of *Rotating Torus Hologram Universe*. The RTHU embeds mutual shifted holograms in "torus carousel". We speak about a rotating torus wherein each hologram is experienced as a Big Bang universe.

So all the Big Bang formulas and rules stay in tact in the RTHU, but the origin of spacetime is changed in a hologram and there-after.

However, my proposal shows reasoning and arguments for calculations in handwritten notes as a raw attempt to solve the crises in cosmology, beacuse why is H_0 not constant in sigma 5 respected measurement-projects? There is difference of about 10%!

Forgive me, I am a dutch independent cosmologist and art-painter, but my RTHU-formulas prove dark energy is variable, instead of constant, which marks my cognitivity. Different cosmological constants are common in the Holograms of the RTHU.

However, and nevertheless, the RTHU-scale-enlargement compared to the classical Big Bang-universe (applied in this proposal), enables to recalculate of what the cosmological constant is in the classical Big Bang-universe. Precisely this fact proves that the introduction of the RTHU is a very realistic perspective.

handwritten copies in this article are raw.

Although my handwritten page-copies are raw, they contribute to my concern of a "clean" universe. Let me tell you this: "As an independent cosmologist and art-painter I wrote a series of 'in-cascade-written' articles in order to puzzle-out what the physical universe could be like otherwise. This has led to the introduction of the RTHU and the Hologram Tensor by bypassing institutional creativity: I followed my own creativity. So, after having read about the the different

cosmological constants measured in different projects I got inspired to an additional puzzle in order to discover one of the matching cosmological constants H_0 by a nonconformal manner.

In this respect my handwritten page-copies show an overview of my formulas, which were earlier applied in my theoretical analyses in my articles. Therein I consequently used algebra (also dimensionally) and an alternative method to maintain the conservation of information in the universe in general, otherwise than predicted by quantumtheory only.

I started my analyses in 2004, publishing in vixra in 2009 until today. I am 72 now (born in 1947), had a starting-career in electronics, projects and advisory, however, changed my interest towards cosmology, including making-paintings (they breath the cosmos of me, DAN, rare, exclusive and interesting for art-collectors and musea^[3]).

Method to upgrade the Classical Big Bang Theory.

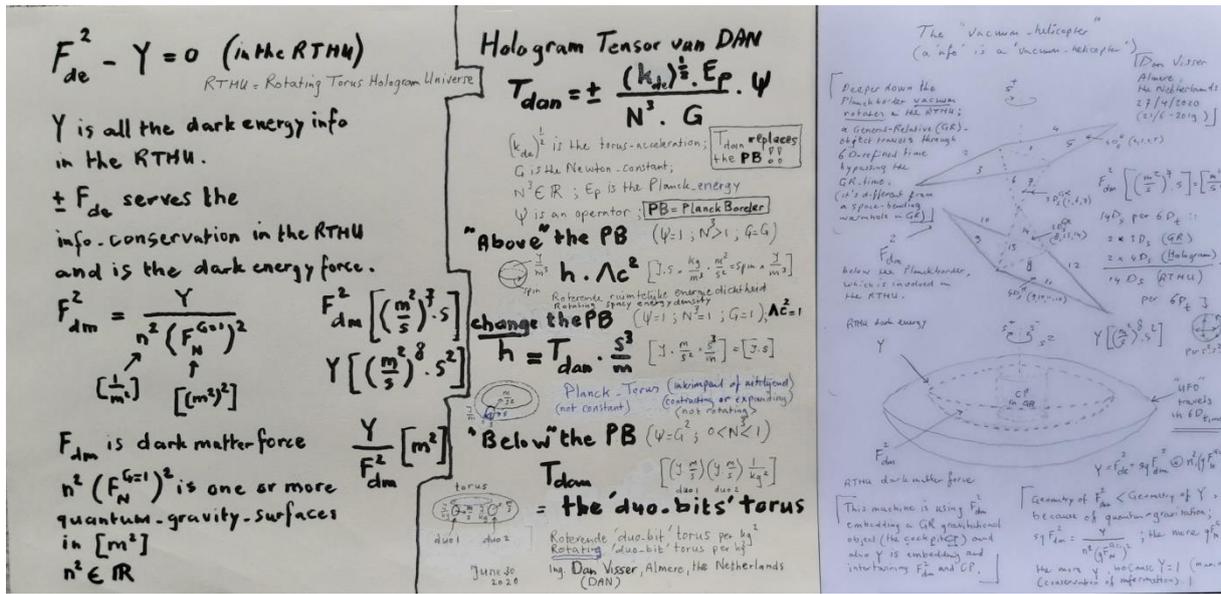
My Hologram Tensor replaces the Planckborder by a formula, which firstly enlarges the dimensions of Planck-gravity and secondly changes the Planckborder in a *Planck-Torus*. Thirdly it determines the Planck domain by 'duo-bits'. These are information-bits that change quantum-entanglement and hence quantum gravity .

In a specific way the Hologram Tensor is an energy-matrix representing sub-quantum-information additional to general relativity. This beyond quantum, however, we speak of pointparticles (no strings), so determination is extended to the determination of the Standard model of forces and particles. My Hologram-formula uses 'values', which change the dimensions in the "dark-zone".

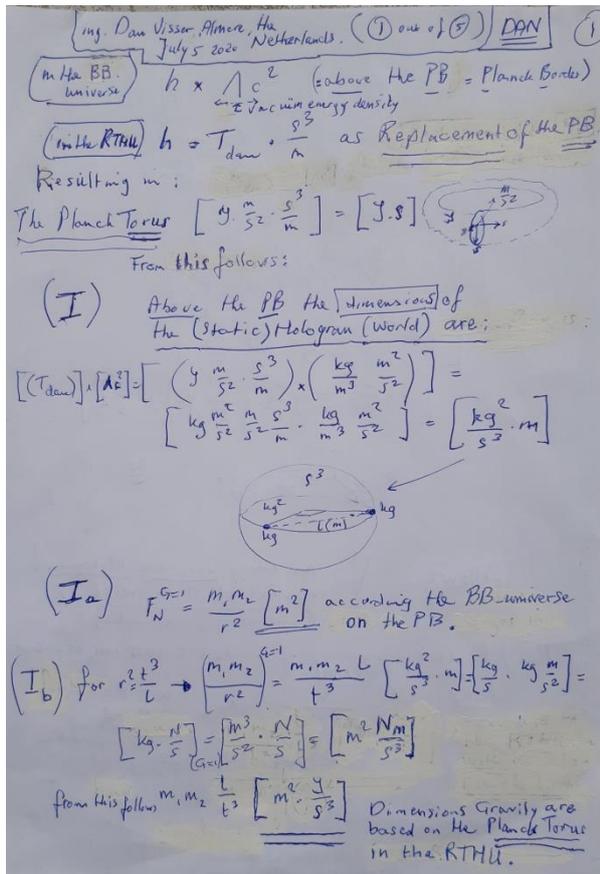
From thereon I focussed on vacuum-energydensity calculated according to quantumdynamics on 10^{120} , which is an extreme large factor compared to the value calculated according to general relativity. However, this factor has been reduced to 1 in the RTHU by enlarging the classical space (3D), causing enlargement of a length by 10^{40} and hence affecting the dimension-scale for H_0 . So, for further readings go to the handwritten pages.

Apology: I used “,” instead of “.” in my calculation-numbers for decimales. However, that is typical dutch; but I'm sorry. You'll understand.

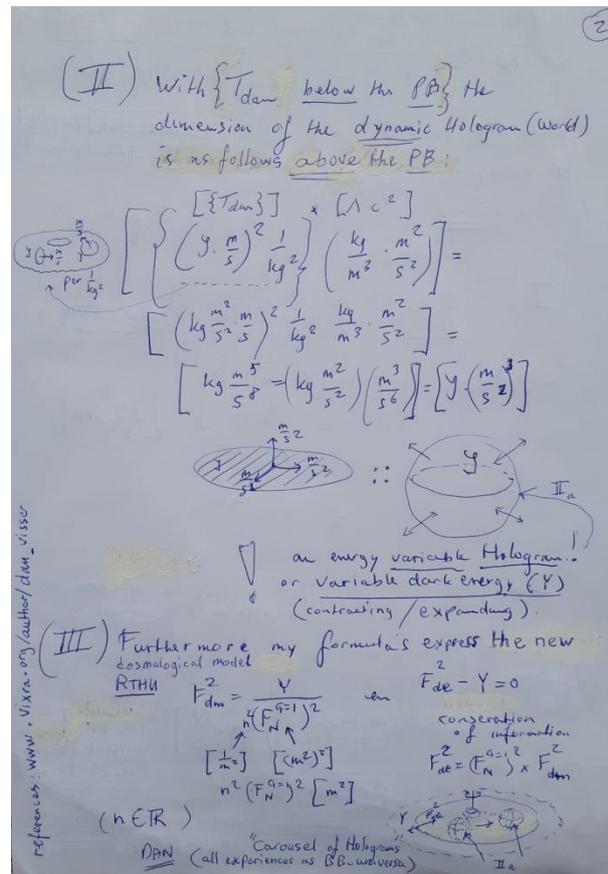
Raw handwritten page-copies (pre-page and page 1 to 6) for the path to the solution of the crises in cosmology.



Pre-page: Overview formulas RTHU, a new cosmological model for the universe by Dan Visser^[4], Almere, the Netherlands (June 30 2020) and his idea for an “ufo” using dark matter force and dark energy to bypass Big Bang spacetime by Hologram-information-dynamics.



Page 1: The Planck Torus



Page 2: Variable dark energy in the RTHU

(IV) $H_0 \left[\frac{\text{km}}{\text{s}} \cdot \frac{1}{\text{Mpc}} \right] \rightarrow 74,5$ Measurements-Projects
 $\rightarrow 74,0$ Adm Riess
 $\rightarrow 73,3$ HOLiCOW
 $\rightarrow 67,4$ Adm Riess

$\frac{74,5}{67,4} = 1,09792$; $\frac{74,5}{67,4} \approx 1,105341$ "Crisis in Cosmology" John Hopkins University

mean H_0 is $\frac{100}{100} \rightarrow$ too big! (in respect of the BB-universe)

(V) Solution to the crisis.

BB $F_N^{G=1} [m^2] < F_N^{G=1} [m^2 \cdot \frac{1}{s^2}]$ according to (Ia), (Ib)

So, based on the (static) Hologram (RTHU), the $F_N^{G=1}$ becomes bigger. However, to get an equivalent $F_N^{G=1}$ in the RTHU, the space in the RTHU must be wider and conformally H_0 must be larger!!

Assumption: When the BB-universe is to be replaced by the RTHU (a new cosmological universe-model), a bigger H_0 will be the case. This assumption appears to be true according to the measurements-projects.

So, I calculate H_0 in the RTHU. I do that by a larger Planck + Torus! , as explained before (in Ia, Ib and II).

Page 3: The RTHU proves to be realistic

(VI) By what can the Planck Torus be larger? (4)

1) In the RTHU all distances are 10^{40} larger in order to equalize the 10^{120} vacuum energy density (calculated by quantum mechanics)

2) So, according to $m, m_e \cdot \frac{L}{\hbar} [m^2 \cdot \frac{1}{s^2}]$
 L for (p) mean $1,616 \times 10^{-35} m \times 10^{40} = 1,616 \cdot 10^{5} [m]$ in the RTHU.

3) The ratio (a factor) of the radius of the BB-universe (size of the invisibility) and the radius of the Planck length (p) will be, as follows:

firstly: (a) $94,61 \times 10^{12} m (= \text{one lightyear}) \times 46,2 \cdot 10^9 ly = 4,399365 \times 10^{21} m$
 $4,399365 \times 10^{26} m$ (invisibility, max visibility)

(b) $94,61 \times 10^{12} m \times 13,7 \cdot 10^9 ly = 1,29615 \times 10^{26} m$ (visibility only)

secondly: $f_a = \frac{4,399365 \times 10^{26} m}{1,616 \times 10^5 m} = 2,72238 \times 10^{21}$
 $f_b = \frac{1,29615 \times 10^{26} m}{1,616 \times 10^5 m} = 0,802 \times 10^{21}$

This will effect the scale-dimension $\frac{1}{Mpc}$ in $H_0 \left[\frac{\text{km}}{\text{s}} \cdot \frac{1}{\text{Mpc}} \right]$

Page 4: Calculation enlargement factors for H_0

4) So, $\frac{1}{Mpc}$ becomes larger with, either the factor f_a or f_b in the new cosmological model (RTHU), as follows:

Firstly $Mpc = 3,086 \times 10^{22} [m]$, from which follows:

(a) $\frac{1}{Mpc} \cdot f_a = \frac{1}{3,086} \times 10^{-22} \times 2,72238 \times 10^{21} = 0,882171 \times 10^{-1} = 0,0882171$

(b) $\frac{1}{Mpc} \cdot f_b = \frac{1}{3,086} \times 10^{-22} \times 0,802 \times 10^{21} = 0,26 \times 10^{-1} = 0,026$

5) From (4a) or (4b) follow two different H_0 's, as follows (based on the first Planck-measurements):

(a) $H_0 \left\langle \begin{matrix} \text{based on} \\ \text{BB universe} \\ \text{in the RTHU} \end{matrix} \right\rangle = 67,9 \frac{\text{km}}{\text{s}} \times 0,0882171 = 5,94583254 \frac{\text{km}}{\text{s}}$ Larger. From this follows (VII).

(VII) $H_0 = 73,3 \left[\frac{\text{km}}{\text{s}} \cdot \frac{1}{\text{Mpc}} \right]$ This $H_0 = 73,3 \frac{\text{km}}{\text{s Mpc}}$ proves a new cosmological model (the whole BB-universe is involved)

(b) $H_0 \left\langle \begin{matrix} \text{based on} \\ \text{only visibility} \\ \text{BB universe} \\ \text{in the RTHU} \end{matrix} \right\rangle = 67,4 \times 0,026 = 1,752 \frac{\text{km}}{\text{s}}$ which results in: $67,4 \left[\frac{\text{km}}{\text{s}} \cdot \frac{1}{\text{Mpc}} \right] \rightarrow 69,2 \left[\frac{\text{km}}{\text{s}} \cdot \frac{1}{\text{Mpc}} \right]$

Page 5: The exact (RTHU) HOLiCOW H_0

DAN: "The origin of the universe is located in a "carousel of holograms": The RTHU (Rotating Torus Hologram Universe)

The Hubble Constant Controversy

The current expansion rate of the universe, called the Hubble constant (H_0), is tied to the universe's fundamental ingredients and laws. But when cosmologists calculate the value of H_0 based on measurements of the early universe, they predict a lower value than when they actually measure how quickly various distant objects are moving away from us in the present-day universe. However, a new measurement of expansion in the present-day universe finds an intermediate H_0 , complicating the cosmological debate.

ESTIMATED EXPANSION RATE OF THE UNIVERSE (km/s/Mpc)

(copy from Quanta Magazine referring to "HoliCOW"-project and the debate in the Kavli Institute, Santa Barbara, CA, USA with Adam Riess; this copy is used for study)

Page 6: For my study: The HOLiCOW view

References.

[1] contact email dan.visser@planet.nl or phone 0031 36 54 99 701

[2] <https://www.quantamagazine.org/cosmologists-debate-how-fast-the-universe-is-expanding-20190808/>

[3] website: www.darkfieldnavigator.com

[4] overview DAN's articles: www.vixra.org/author/dan_visser