

Origin and Nature of Speed of Light

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Abstract

Following the ideas presented in “Search for the World Formula”¹ and “Unified Principles of Nature”² it was presented a novel combination of mathematics and physics for quantization of the 3 Dimensions of space (L^3) to 5 Dimensions space-time (L^3T^2). Here is a brief excerpt at a glance to show the true nature of the “constant” “speed of light in vacuum” and to what extent the existence of this constant c proves that spacetime in reality is 5-dimensional.

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¹ Pohl M.U.E (2022): Search for the World Formula, Scientific God Journal Vol 13 No1, <https://scigod.com/index.php/sgj/article/view/781>

² Pohl M.U.E (2019): Unified Principles of Nature, Scientific God Journal Vol 10 No3, <https://scigod.com/index.php/sgj/article/view/669>

In order to construct a coordinate system (3D Space) in which the axes are perpendicular to each other, we need two 90° angles. To do this, we introduce three spatial axes (Dimensions L) L³ with a uniform measure (Diameter of the sphere) D = 1 meter. In order to construct an angle of 90°, we need two time axes (Dimensions T) T² for the two radians of the spherical coordinates.

The relationship $T_2 = (\pi / L) T_1$ applies here, as both time axes represent the needed angle of 90°. As for L₁, L₂ and L₃ the Unit is given with D = 1 Meter we write $T_2 = (\pi / D) T_1$ in order to relate and calibrate this spatial unit to the both angular units T₁ and T₂. Doing this we get all 5 Dimensions related and calibrated to each other for measurements in the our universe. As the equatorial diameter of earth

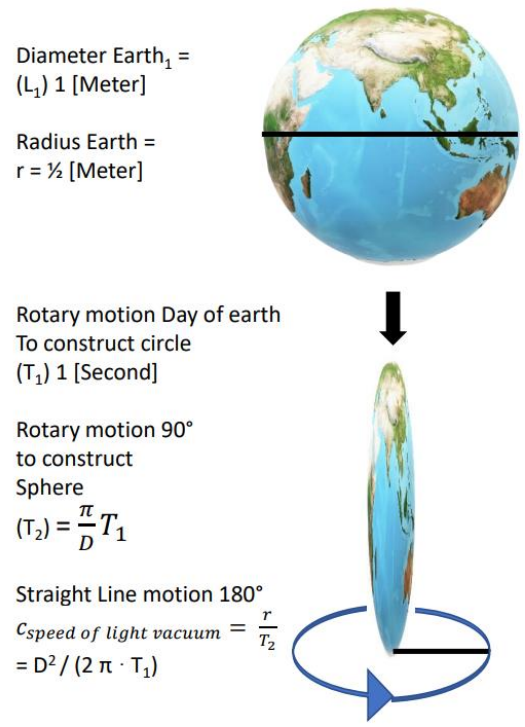
(axis of T₁) is needed, we use the data from WGS (World Geodetic System 84³ (12756274 Meter), and for T₁ we use the originally (until 1956) arbitrarily defined rotation duration of 86400 seconds:

$$T_2 = (\pi / 12756274m) \cdot 86400s = 0,02127843956 \text{ s/m}$$

While T₁ is referring to a rotational motion in 2 dimensions in space, T₂ is referring to a motion in straight line (2·90° angles = 180°). Therefore the “speed of light in a vacuum” is given with relating the radius of earth to T₂:

$$C_{\text{(Speed of light in a vacuum)}} = \text{Radius}_{\text{Earth}} / T_2 = 299746463,2 \text{ m}^2/\text{s}$$

or simple $c_{\text{WGS84}} = \text{Diameter}_{\text{earth}}^2 / (2\pi \text{ Day}_{\text{earth}}) = 299746463,2 \text{ m}^2/\text{s}$



What does it mean that the quantity (speed of light in vacuum) appears here in the unit [m²/s] and not in the unit [m/s] as postulated by Einstein? Quite simply, this experiment confirms that time is in fact two-dimensional and Einstein's theory is thus flawed and thus refuted. What did Einstein do wrong? Einstein simply declared a velocity to be the fundamental constant. This makes limited sense, because time and lengths seem proportional, but he did not understand the interaction of space and time. If one sets a quantity of the unit [m/s] as a fundamental constant, then space and time are linked in such a way that they could be exchanged arbitrarily, i.e. the universe could be represented without time or without space. This is obviously nonsense, at least we realize that we have not yet encountered such a thing in reality.

Since it has already been shown that the circle ratio is the only natural constant and determines the connection between space and time, it follows that a circle (one surface, i.e. 2 spatial dimensions) always has the same area, no matter from which direction in three-dimensional space I look at it. The circle in the projection always has an area between 0 (the circle appears

³ https://de.wikipedia.org/wiki/World_Geodetic_System_1984

as a line from the plane of the circle) or a maximum of πr^2 . Simply because the area of an ellipse is given with

$$A[m^2] = a[m] \cdot r[m] \cdot \pi$$

and lies with $a < r$ between 0 and πr^2 . If one now takes into account the connection shown in ¹

$$\pi = \frac{\text{circumference of a circle}}{\text{Diameter of a circle}} = \frac{1 \text{ time unit}}{1 \text{ unit of length}}$$

Arises

$$A[m^2] = a[m] \cdot r[m] \cdot \left[\frac{s}{m}\right]$$

And with the prerequisite that the radius should represent the number "1" as the original measure

$$A\left[\frac{m^2}{s}\right] = a[m] = \text{natural constant speed of light}$$

Here it becomes clear that the constant speed of light only expresses the connection that the area of a circle can only be between 0 and πr^2 , depending on the perspective. And since the Earth's rotation only takes place in one plane or in a spatial axis and was defined by us as a "clock", this constant appears as a surface, i.e. two-dimensional. Einstein obviously didn't really think carefully about his theories and tied us up a bear.

The deviation of this calculated speed of light is - 0.0154% to the value of the speed of light 299792458 m/s defined by CODATA⁴ (Comitee on Data for Science and Technology). If we now compare the WGS84 based calculation of Speed of Light with the CODATA speed of light, we need to consider that the measurement of the speed of light was based on the Bessel-Ellipsoid. We can therefore further calculate the error to

$$\frac{c_{WGS84}}{c_{Codata}} \cdot \frac{\text{radius}_{WGS84}}{\text{radius}_{Bessel}} = \frac{299746463 \frac{m}{s} 6378137m}{299792458 \frac{m}{s} 6377397m} = 3,74 \cdot 10^{-5} \text{ error}$$

The error is near the uncertainty of the gravitational constant G [$\text{kg m}^3/\text{s}^2$] with $2,2 \cdot 10^{-5}$.

The deviation of $3,74 \cdot 10^{-5}$ corresponds to about 238 meters for each opposite tangent of the earth's surface. This very small inaccuracy is easy to explain, since the sea depth at the equator is largely up to 4000 meters and water is less dense than the land masses.

The interpretation is quite easy. As it was shown in "Search for the World Formula", with the definition of time and space automatically one defines the center of universe at rest. But against Einstein's considerations, one must not use a point-like (infinite small space) center

⁴ <https://codata.org>

(leading to necessary mathematical transformations over the three-dimensional space and using “speed of light” as timelike center of universe) but a volume or three-dimensional form at rest. As the core of earth is not at rest, the Speed of light in vacuum is a representation of the surface of earth at rest, because the second of time and the meter of length were originally defined on base of earth dimensions and rotation-speed.

It was shown that against Einstein’s considerations, space-time is 5-Dimensional and in order to separate the arrow of time, i.e. the principle of causality from space-time, space-time must be constructed with two angles as two time-dimensions.

Conclusion

What did Einstein Wrong? What about Quantum Theory ? With this theory (“World Formula”: only natural constant = π = unit of time / unit of length) we took into account both gravity and Electromagnetism at once, while Einstein split both up and did not understand the conception of spacetime.

Taking into account Gravity AND Force and setting both equal:

$$\begin{aligned}
 & \text{Gravitation } F = G * [\text{kg}^2]/[\mathbf{m}^2] \\
 & = \text{Newton Force } F = [\text{kg}] [\text{m}/\mathbf{s}^2] \\
 & \Rightarrow G * [\text{kg}^2]/[\mathbf{m}^2] = [\text{kg}] [\text{m}/\mathbf{s}^2] \\
 & \Rightarrow [\text{kg}] = [\mathbf{m}]/G * [\mathbf{m}^2/\mathbf{s}^2] \quad | \text{ (multiply } (\mathbf{c}^2) \text{ as natural constant on both sides)} \\
 & \Rightarrow E = [\mathbf{m}]/G [\mathbf{m}^4/\mathbf{s}^4] \quad | \text{ (dissolve constant } G [\text{m}^3/(\text{kg } \mathbf{s}^2)] \text{ in contrast)} \\
 & \Rightarrow E = [\text{kg}] [\mathbf{s}^2/\mathbf{m}^2] * [\mathbf{m}^4/\mathbf{s}^4] \\
 & \Rightarrow E = [\text{kg}] [\mathbf{m}^2/\mathbf{s}^2] \\
 & \Rightarrow \mathbf{E} = \mathbf{M}\mathbf{c}^2
 \end{aligned}$$

(It was used $[\mathbf{m}^2/\mathbf{s}^2]$ as constant (electromagnetism $\epsilon_0\mu_0\mathbf{c}^2 = 1$) to split into $[1/\mathbf{s}]$ and $[1/\mathbf{m}]$ to apply 90° Angle: $\pi = \mathbf{s}/\mathbf{m}$) and $[\mathbf{m}^2/\mathbf{s}] = \text{constant} = \text{Rotating earth as constant defining unit } [\pi = \mathbf{s}/\mathbf{m}]$ instead of speed of light as shown here to be correct in the experiment). Therefore Wave-Particle Dualism is dissolved.

Against this, against a correct dimensional Analysis, Einstein’s “Special Relativity” is using “c” as constant in Newtonian Force $F=Ma$ without paying any attention to Newtons “Gravity” ($F_g=GM_1M_2/r^2$):

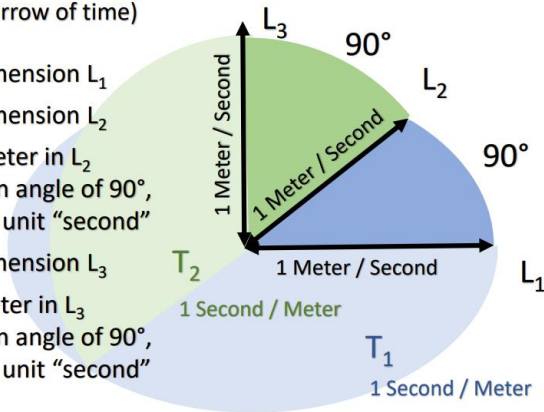
$$\begin{aligned}
 & F = [\text{kg}] [\text{m}/\mathbf{s}^2] \quad | \text{ multiply } [\mathbf{m}/\mathbf{s}] \text{ on both sides (setting } \mathbf{c} = \text{constant)} \\
 & \Rightarrow F [\mathbf{m}/\mathbf{s}] = [\text{kg}] [\mathbf{m}^2/\mathbf{s}^3] \quad | \text{ divide by } [\mathbf{s}] \text{ on both sides lead to } \Rightarrow \mathbf{E} = \mathbf{h}\mathbf{f} \\
 & \Rightarrow E = [\text{kg}] [\mathbf{m}^2/\mathbf{s}^2] \\
 & \Rightarrow \mathbf{E} = \mathbf{M}\mathbf{c}^2
 \end{aligned}$$

Einstein came to the same result $E=Mc^2$, which in fact is not wrong, but with using a wrong 1st principle and without knowledge of “why” the speed of light is constant. Therefore today does not exist any logical interpretation of Quantum Theory and General Relativity. Both theories are illogical and contradicting themselves and each other.

Construction of 5D Spacetime $L^3 T^2$

Without causal order (without arrow of time)

1. We introduce 1. spatial Dimension L_1
2. We introduce 2. spatial Dimension L_2
3. To be able to measure a meter in L_2 from a meter in L_1 , we need an angle of 90° , In the plane T_1 that is given in unit "second"
4. We introduce 3. spatial Dimension L_3
5. To be able to measure a meter in L_3 from a meter in L_2 , we need an angle of 90° , In the plane T_2 that is given in unit "second"



Comparison with 4D Spacetime $L^3 T^1$

With causal order (with arrow of time)

As no plane for T_2 is given, on that a balance of forces could be calculated (relative motions of observer vs. observed are compared on observers rest-frame), a „irrational“ causal order (arrow of time) is present, that lead to a „Big Bang“ in the past.

