# New Interpretation of Planck constant and Boltymann constant

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**Abstract**

Recently we have estimated new values for the Planck constant and the Boltzmann constant. We are going to interprete them.

## 1 Introduction

Using Einstein's equation with a metric being a fourdimensional sphere, we received new geometrical values of Planck's constant $\hbar$ and Boltzmann's constant $k$ [1].
Those values are:

$$\hbar = \frac{1}{4\pi}\frac{J}{Hz}, \tag{1}$$

$$k = \frac{1}{8\pi}\frac{J}{K}. \tag{2}$$

Since Einstain's equation basis is geomatrical, the constants should be interpreted geometrically. (1) is interpreted as the spin of a Dirac fermion. The value $4\pi$ supports the result of Dirac's equation interpreting a Fermion being a fourdimensional spinor. Moreover both equations, Dirac and Einstein, are describing nature being relativistic.
(1) is extracting the frequency of a Dirac Fermion, i.e., $4\pi$. Interestingly the temperature is a geometrically quantity. Moreover the term (2) is disclosing temperature to be proposed to be made of gravitons. Gravitons are proposed to be quantities that emitted by connecting two Fermions by doubling the frequency of a Fermion, i.e., $8\pi$. F.e., a graviton is going to be emitted by the creation of a electron positron pair.

## 2 Conclusions

Our solutions of Einstein's equation are demanding quantized values for:

$$E = \hbar\omega \qquad \omega = 4\pi\nu, \nu = 1, 2, 3, \ldots, \tag{3}$$

$$E = kT, \qquad T = 8\pi n, n = 1, 2, 3 \ldots . \tag{4}$$

We are observing that Einstein's equation of General Relativity is applicable to describe microscopic physics. Our considerations are revealing that Einstein's equation is more fundamental as known yet. Without taking into account quantum mechanics, we found results which are somehow making common sense.

## References

[1] K. zum Felde; J. Pure Appl. Math 2023;7(2); 89