On the density of space

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Abstract

A recent paper [1] came to our attention in which the author makes a striking conclusion about the properties of space. This paper investigates it in detail and demonstrates that upon such conclusion either the General Theory of Relativity is wrong or the mentioned author made some mistakes which have yet to be identified.

1 Introduction

Amrit S. Sorli in his paper [1] came to the conclusion that »(the)more mass is in a given volume of quantum space, (the) less space is dense.« This claim deserves a thorough physical analysis which will be presented here.

2 Space density related to mass

The density of matter is defined as the ratio between mass and volume:

$$\rho = \frac{m}{V} \tag{1}$$

Similarly, the density of space can be defined as the ratio between the number of atoms in a space volume:

$$\rho_s = \frac{N}{V} \tag{2}$$

It follows that **the <u>more</u> mass is in a given volume of (quantum) space, the <u>more</u> space is dense**. Such a result is in clear contradiction with the claim of Amrit S. Sorli. It also follows that the General Theory of Relativity is wrong or the mentioned author made some mistakes which yet have to be identified.

6 Conclusion

Upon the general definition of density we clearly demonstrated that the more mass is in a given volume of (quantum) space, the more space is dense. This conclusion is in clear contradiction with Amrit S. Sorli's claim: »(the) more mass is in a given volume of quantum space, (the) less space is dense.« Further investigation is needed to prove whether the General Theory of Relativity is wrong or the mentioned author made some mistakes which have yet to be identified.

References

[1] Amrit S. Sorli, Einstein Curvature Tensor and Density Tensor of Quantum Space, viXra:0910.0014 (2009)