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Hoaw can you calculate the accelerated expansion of the universe?

Annotation

Space is quantized. The Hubble extension makes all these areas non-inertial. Limit speeds in these areas will be different. Because of this, there is some extra force.

Keywords.

Local areas, quantization, maximum speed, expansion of the Universe.

This calculation can be made using generally accepted non-complicated calculations.

It is necessary to calculate the pushing force. All bodies in the Universe consist of particles, all their interactions with each other are independent - this is a known fact. That is, you can consider a couple of particles, and then transfer the consideration to any volume. The so-called "force" by definition is the second derivative of the Lagrangian. The book Landau and Lifshits, Theoretical Physics, Volume 2, describes these formulas for such particles. Infact, relativisticinteractionformulasareconsidered.

Now let us recall another well-known fact - the space of the Universe cannot be divided into infinitely small areas. Known axioms cease to act less than a certain size. This is described in axiomatic quantum field theory. That is, space is quantized. That is, consists of separate local areas. It is also clear that the existence of the Hubble expansion makes all these areas non-inertial with respect to each other. It is clear that such an insignificant difference usually does not affect anything, but we are going to consider everything on the scale of the Universe, and such differences may turn out to be significant.

Since space is quantized, it is necessary to consider derivatives in finite differences. Let these differences be insignificantly small, but they are finite and not less than the minimal local area. In fact, when considering the speed of repulsion and attraction of a single particle from a certain point A, we will have to consider this attraction and repulsion in different local areas. Now we recall that

the change in the Hubble metric does not depend on any interactions, but changes only with distance. And if we investigate the limiting speed of information transfer in different local areas, then it turns out that in more distant local areas information is transferred to a greater distance in one and the same time than in closer ones. I repeat: let all these differences be insignificant, but they exist and if we examine them with an accuracy of 43 orders of magnitude, they are detectable. And since the Hubble change of the metric is not related to speed, then the maximum speed of information transfer can be obtained for each local site and make it simple by addition.

Now we recall that the formulas for the interaction of charged particles (of which, in the end, all bodies and particles consist) we have defined as relativistic. We also determined that the maximum speed of information transfer "c" for these formulas has each local area. Now we can consider the second time derivative of the Lagrangian for each particle and for each interaction. It is clear that the repulsive forces will differ from the forces of attraction, that is, there is some force that gives acceleration to expansion.

The formulas and calculations themselves are simple and anyone who is a little familiar with physics will be able to carry them out on their own, if not, then a detailed description https://elkin58.livejournal.com/

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