Gravity and the CMBR (Cosmic Micro-wave Background Radiation)

Eran Sinbar

Ela 13, Shorashim, Misgav, 2016400, Israel,

Telephone: +972-4-9028428, Mobile phone: +972-523-713024,

Email: eyoran2016@gmail.com ;

Abstract

Based on Einstein's field equations, mass curves space time and curvature of space-time dictates the gravitational field around the mass. In the theory of general relativity, the **equivalence principle** is the equivalence of gravitational and inertial mass, and Albert Einstein's observation that the gravitational "force" as experienced locally while standing on a massive body (such as the Earth) is the same as the *force e*xperienced by an observer in an accelerated frame of reference. Since acceleration consume energy, it's a worthy question to ask how curvature of space time can supply this equivalent required energy for acceleration.

Let's imagine that two similar small objects (e.g. mass A and mass B) are standing still in space-time relative to each other in their frame of reference. Now imagine that mass A absorbs an energetic pulse of gamma ray burst and starts to increase its mass (for example by absorbing radiation and increasing its thermal energy) .Its new effective mass will be signed as A' where A'>>A.

Based on the interpretation today of the Einstein's field equations the curvature of space time causes mass B to move towards mass A' since it is the shortest geodesic path in the curved space-time. The curvature of space time is practically the potential energy.

But from mass B point of view (in its frame of reference where both mass A and B were standing still before the increase of mass A), it feels suddenly a force towards mass A' and an increase in its kinetic energy and it is a worthy question to ask where does this extra kinetic energy come from? How can curvature in space-time explain this extra kinetic energy of mass B?

This article tries to analyze the Einstein field equations in a new heuristic approach and to explain the cause for the movement of mass B towards the increasing mass A' due to what is related as gravitational force. The article also suggests that the source of the extra kinetic energy given to mass B comes from the CMBR (Cosmic Micro wave Background Radiation).

1. Introduction

The Einstein's field equation main concept is that mass curves space-time (Einstein tensor) and curvature of space time dictate the movement of objects (stress energy momentum tensor), based on their shortest geodesic path in space-time.

Let us now imagine 2 objects of equivalent mass A and mass B floating in space in the same velocity vector relative to each other with no effective gravitational force between them.in their frame of reference they are standing still with no gravitational force relative to each other. Now let us imagine that mass A absorbs photonic radiation burst from afar by a strong radiation source causing its temperature and mass to rise fast and dramatically (since energy and mass are equivalent) to what we will relate as new mass A'. let us assume that the new mass A' is large enough to curve space-time in a way that mass B feels a gravitational force towards mass A'. from mass B point of view it feels a gravitational force in the void of space caused by the curvature of space-time. The question arise from this scenario, how can the curved void of space-time apply force and energy on mass B which was fully still in its frame of reference ,and where does this extra kinetic energy ,given to mass B come from?

2. Dynamic flow instead of curvature, of space-time

This article suggests a new interpretation (a new equivalence principle) to the Einstein field equations. Let us imagine two separate space-time behaviors. The first is based on the standard interpretation where the increased mass A' curves space time and curvature of space-time applies a gravitational field on mass B since this is the shortest geodesic path in space-time, based on Einstein's field equations. The second is based on a new suggestion of dynamic flow of space towards the increased mass A'. Meaning, the increase of mass A doesn't increase the curvature of space-time around it but rather increase the dynamic flow of space-time towards it. Mass A' absorbs into it the flow of space-time (as if it was a sink) and mass B floats in this flow of space-time towards mass A' as if it was a wooden log floating on a river towards a waterfall. Our equivalence principle assumes that there is no experiment that can be done on mass B in order to agree which one of the space-time behaviors is the correct one. Mass B cannot know if he is moving in a geodesic space – time line towards mass A' in a curved space-time or it is standing still in a floating space - time towards mass A'. Mass A', behaves like a sink that sucks in the space void that is surrounding it. This flow of space-time is the gravitational field

3. Where does space time flow to and where does it come from?

If space floats towards mass A' as this article suggests, than there is an important questions to be asked: Where does this space float to? This article suggests that anti-matter applies anti-gravity [2] and for each particle of matter that absorbs space (gravity) there is an entangled anti-matter particle [3] that spreads out the fabric of space-time (anti- gravity) .As the universe developed, photons generated entangled matter and anti-matter pairs .Most of these pairs annihilated into the CMBR while a small percentage of pairs separated into space. Matter particles clustered together because of the gravitation pull while anti-matter particles were spread apart throughout the universe because of their anti – gravitation rejection. As the matter particles clustered to form galaxies, the local gravitation grew in the cluster region while their entangled anti matter particles spread throughout space increased their anti- gravitation effect causing an overall expansion of the universe. As galaxies clustered and eventually formed black holes in their center, the local curvature grew but also the overall expansion of space due to the entangled anti matter particles grew, and this can explain the overall acceleration in the expansion rate of the universe. As space expands, the cosmic micro wave background radiation (CMBR) is red shifted and it is losing its photonic energy. This lost photonic energy can explain the extra kinetic energy given to mass B as it is being pulled and accelerated towards mass A' (energy conservation).

.

4. Conclusion

This article is focused on a basic question regarding Einstein's field equations, how can curvature in the void of space-time apply a gravitational force on a particle?

The standard theory is that a large mass A' curves space-time and gravitons mediate the gravitational force to a smaller mass B that moves toward mass A' in order to reach its shortest geodesic path in space-time.

This article suggests a new concept in which Einstein's field equations describe the dynamic flow of space-time instead of curvature. Matter particles behave like a sink for space-time while their entangled anti matter particles spread out space causing it to expand in the large scale.

This article suggests a new equivalence principle in which curvature and geodesic lines are replaced by the flow of space time into matter particles (as if they were a sink sucking in the space-time fabric). The space-time fabric that was absorbed into matter clustered particles is spread back throughout the universe through the entangled anti-matter particles [2],[3] which are spread uniformly throughout space. We also suggest that this flow of space-time happens through the GRID dimensions [1] .This explains also the fact that matter tends to cluster up while anti-matter tends to spread out evenly throughout space, and this can explain the missing anti-matter

in our universe, since its spread evenly in space and cannot be detected. Since the universe tends to cluster matter into stars, then galaxies and then to galaxy clusters with central black holes, we can expect that since the big bang the local gravitational pull in the clusters region increased while the anti-gravitational expansion of space through the spread out anti-matter also increased, resulting in the accelerated expansion of space. As space expands the cosmic micro wave background radiation expands and cools down and its energy is reduced. The reduced energy from the cosmic micro wave background radiation becomes the extra potential and kinetic energy due to the gravitational pull. This way we can explain the total energy conservation of the universe .**The increase in the potential and kinetic energy due to matter clustering should be equivalent to the loss of energy due to the cool down of the cosmic micro wave background radiation**. General relativity describes gravity as curvature in space time without a deep explanation for the source of the kinetic energy due to gravitational forces. This article describes the gravitational field as flow of space time from matter to its entangled anti-matter particle (through the grid dimensions). This flow of space, clusters the matter particles together as the anti-matter particles spread apart causing the expansion of space .As space expands the energy from the cosmic microwave background radiation transforms from radiation energy ,to potential and kinetic energy, due to the gravitational force. As the cosmic micro wave background radiation cools down, there is a need to increase the expansion of space in order to gain from this radiation the same amount of increase in the potential and kinetic energy due to gravity. This also explains the acceleration in the expansion rate of space.

Increase in potential, heat and kinetic energy due to gravity = decrease in the CMBR

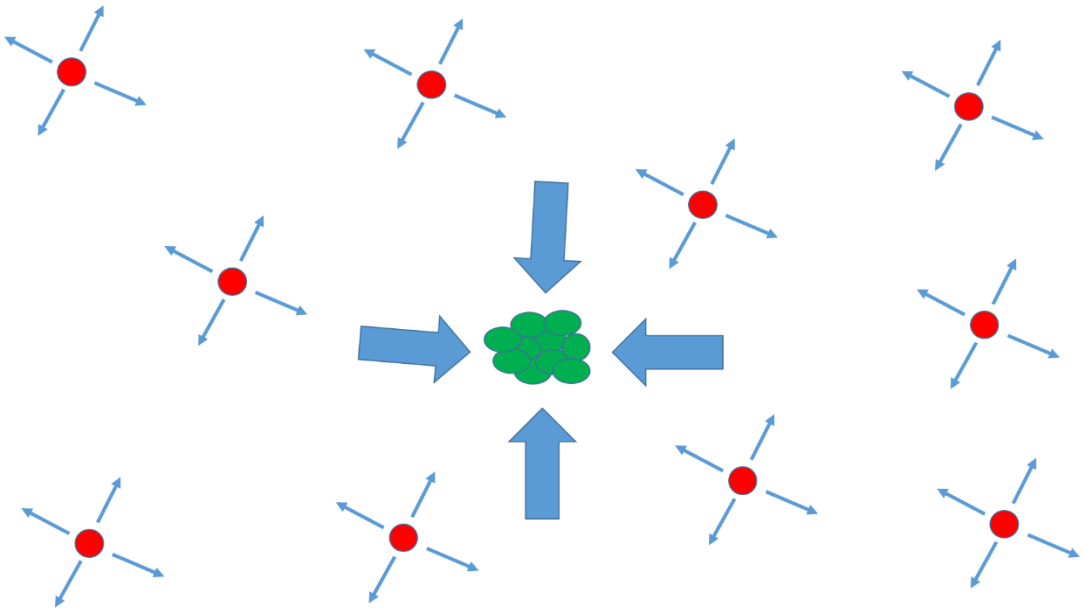

Figure 1

Figure 1: The green dots represent matter particles. The red dots represent anti-matter particles. The blue wide arrows represent space time flow towards the matter particles (gravitational field). The thin blue arrows represent space time flow away from the anti-matter particles (anti-gravitational field). The matter particles cluster together. The anti-matter particles spread apart. Space flow into the grid dimensions of the matter particles ("drain") and out of the grid dimensions of the anti-matter particles ("source"). As matter clusters and the gravitational field increases the overall flow increases and the overall space expands. The CMBR which is spread uniformly in space since the "Big Bang" cools down due to the expansion of space. This decrease in the CMBR transforms to the increase in potential and kinetic energy due to increase in the gravitational field (energy conservation). As the CMBR cools down there is a need to increase the expansion of space to receive the same amount of increase in the gravitational field. This effects the acceleration in the expansion of space.

References

[1] Quantization of photonic energy and photonic wavelength

http://www.slideshare.net/eransinbar1/quantization-of-photonic-energy-and-photonic-wave-length

[2] Anti-matters gravity paradox

http://www.slideshare.net/eransinbar1/anti-matters-gravity-paradox

[3]Entanglement between matter and anti-matter particles

http://www.slideshare.net/eransinbar1/entanglement-between-matter-and-anti-matter-particles

[4] Non quantum entanglement through time and gravity

https://www.slideshare.net/eransinbar1/non-quantum-entanglement-through-time-and-gravity