

Super-residual Force of Strong Nuclear Force (from Gluons) Creates Gravity (as Well as Residual Force for the Nuclear Force.)

ABSTRACT

The strong nuclear force which holds together the quarks in the protons and the neutrons is very different from the residual force that keeps the protons and neutrons bound together in the nucleus of an atom. This postulates that there is also a super-residual force from the the gluon interactions of the strong nuclear force. This super-residual force would, obviously, be extremely weak. The super-residual force equals gravity. Gravity is extremely weak.

A radical, three-part new possibility for gravity.

[1] As electromagnetic radiation is constantly alternating between its electrical and magnetic component, so, the gravity force transmission method could be constantly alternating between its time and space length component.

$\text{space length} = \text{time} * c$ where c is the velocity of light. [Note: not c squared.]

[2] As electromagnetic radiation is caused by an electron in a high energy state dropping into a lower energy state & emitting the extra energy as electromagnetic radiation, so “gravity radiation” (as space-time distortions) could be caused by a mass in a high energy state dropping into a lower energy state & emitting the extra energy as “gravity radiation” (as space-time distortions).

[3a] The high energy state of a mass could be caused by the expansion of the universe carrying the mass to an expanded “high energy” space level. The mass quickly “drops down” to its lower energy, “local gravity” non-expanded space level. This extra energy is emitted as “gravity radiation” (as space-time distortions). This “shrinkage in mass space” creates mass attraction. In layman’s terms, it could be viewed as the shrinkage causing a local “vacuum” which “tries to suck in the rest of the universe”. This would imply that gravity needs [a] an expanding universe & [b] a difference between “universal gravity / expansion” & “local gravity /expansion”. This would imply that if there was enough matter in the universe to halt expansion of the universe [We are a long way from finding that much matter!] it would also halt gravity! Matter would gradually become unstuck as gravity reduced!

[3b] Because there is a difference between “universal gravity / expansion” & “local gravity /expansion” this would mean a difference in the differences on traveling from the centre of a galaxy, to the outer rim of a galaxy and further out into the inter-galactic regions within a local group of galaxies. Near the centre of a galaxy, a given mass would have a larger hold on nearby masses, appearing to give them more mass / inertia and hence slower velocities. The effect would taper off on moving away from the centre of a galaxy, leading to faster velocities towards the edge of galaxies.

INTRODUCTION

The force carrier, the gluon, carries the strong nuclear force, which holds together the quarks within the protons and the neutrons in the nucleus. There is a residual surplus force (involving mesons) which binds together the protons and the neutrons in the nucleus. This postulates that there is also a super-residual force from the the gluon interactions of the strong

nuclear force. This super-residual force would, obviously, be extremely weak. The super-residual force equals gravity. Gravity is extremely weak.

At first sight, it is very surprising that a strong short-range nuclear force should produce a weak super-residual force with an infinite range, (It's probably a dimensional thing.) but the strong nuclear force is very different from the residual force that keeps the protons and neutrons bound together in the nucleus of an atom!

This would mean that:-

[a] The [main] strong force involves 3 quark interactions. The [residual] strong force [= nuclear force, holding protons & neutrons together] involves 2 quark interactions [mesons], so if the [residual, residual] strong force = gravity force, holding masses together, in the sequence, would involve 1 quark interaction! Free quarks don't really exist in nature, so the next best option would be leptons. Of the 6 different leptons, the 3 different types of neutrino hardly interact with normal matter at all, whilst the 3 different types of electron type lepton are not known as gravity force carriers, so, NO gravitons!

[b] NO EM radiation from the strong force. NO EM radiation from the nuclear force, so NO EM gravity waves!

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[3b] Because there is a difference between "universal gravity / expansion" & "local gravity / expansion" this would mean a difference in the differences on traveling from the centre of a galaxy, to the outer rim of a galaxy and further out into the inter-galactic regions within a local group of galaxies. Starting at the centre of a galaxy, there would be the largest difference between "universal gravity / expansion" & "local gravity / expansion". This would create the largest energy change between "universal gravity / expansion" & "local gravity / expansion". This would be where gravity would have the greatest effect for a given mass. A given mass would have a larger hold on nearby masses, appearing to give them more mass / inertia and

hence slower velocities. The effect would taper off on moving away from the centre of a galaxy, leading to faster velocities towards the edge of galaxies.

This could mean that the gravitational constant $[G]$ would no longer be a constant, but would depend on where in the universe it was measured!

Currently accepted ideas suggest that with sufficient matter the expansion slows, halts, and then becomes contraction. This is based on "constant gravity". With gravity reliant on [a] an expanding universe & [b] a difference between "universal gravity / expansion" & "local gravity / expansion", gravity would reduce when expansion slowed, so the expansion rate would reduce more slowly or may even increase.

If the expansion of the universe moved into the contraction stage, near a galaxy's centre, a given mass would have a smaller hold on nearby masses, appearing to give them less mass / inertia and hence faster velocities. The effect would taper off on moving away from the centre of a galaxy, leading to slower velocities towards the edge of galaxies. This would lead to very different evolution of galaxies!