Mass Gap

(Entanglement Space Energy State)

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Abstract

In quantum field theory, the mass gap is the difference in energy between the vacuum and the next lowest energy state. The energy of the vacuum is zero by definition, and assuming that all energy states can be thought of as particles in plane-waves, the mass gap is the mass of the lightest particle. The purpose of this paper is to suggest that the lowest state in a system is the entanglement which's gravity for the Entanglement State is calculated by 2.99E12 x 1G / 9.8 m/s2 = 305102040846 G= 1/30510204086 G = 3.277592E-12 G X 1E-32m= 3.277 E-44 at 1/8.96 E20 Joules /Kg=1.11E-21 Joules/Kg energy state.

I. Entanglement Mass Gap

If 89,875,517,873,681,764 Joules /kg =299,792,458 m/s 2 then the table below holds. Four entangled photons will have a force of 3.268 E-40 G's exerted on them. The space between the Entangled Photons will have 3.2771952E-44 G's exerted in the gap. Gravity for the Entanglement space is calculated by 2.99E12 x 1G / 9.8 m/s2 = 305102040846 G= 1/30510204086 G=3.277592E-12 X 1E-32m = 3.277592E-44 G at 1/8.96 E20 Joules /Kg=1.11E-21 Joules/Kg energy state. Then Gravity for the Photon is calculated by 299792458 m/s2 X 1G / 9.8 m/s2 = 30591067 G = 1/30591067= 3.26E-8 G X 1E-32m = 3.26E-40 G at 1/8.98E16 Joules /Kg=1.11E-17 Joules/Kg energy state.

System	Repulsion	Energy state	G's	Energy State	M/S 2
Vacuum	100%	0	0 m/s2	0 Joules/Kg	0 m/s2
4 Photons = AB	100%	1.11E-17 Joules/Kg	3.268E-40m/s2	1/8.98E16 Joules /Kg=1.11E-17 Joules/Kg	(299792458m/s2)
Entanglement= C	100%	1.11E-21 Joules/Kg	3.2771592E-44 m/s2	1/8.96 E20 Joules /Kg=1.11E-21 Joules/Kg	(2.99E12m/s2)

Yang–Mills Existence and Mass Gap. Prove that for any compact simple gauge group G, a non-trivial quantum Yang–Mills theory exists on R 4 and has a mass gap Δ > 0.

System or Group = 4((AB)+C)