EINSTEIN FIELD EQUATIONS RE-EXAMINED

$G_{\mu,\nu}$ is the Einstein curvature tensor which represents the geometry of spacetime. $T_{\mu,\nu}$ is the energy-momentum tensor in spacetime. The Einstein field equations are given by $G_{\mu,\nu} = CT_{\mu,\nu}$ where C is a constant. The value of C is determined by comparison of Newtonian physics with the Einstein field equations.in the limit of small mass densities and low velocities. See references 1 and 2. As far as i know, this is the only determination of the constant C.

The energy and momentum associated with observable baryons, leptons, and bosons is too small to explain the structure of galaxies and the acceleration of the expansion of the universe. Two new terms were postulated and added to $T_{\mu,\nu}$. They were called dark energy and dark mass because their only observable effect is gravitational(no observable electromagnetic radiation). Multiply the new $T_{\mu,\nu}$ by the value of C in the first paragragh, and get a larger $G_{\mu,\nu}$, which can explain the structure of galaxies and the expansion of the universe.

I propose that $T_{\mu,\nu}$ consists only of the terms associated with observable baryons, leptons, and bosons, but not the terms associated with dark energy and dark mass. Furthermore, I propose that C is a different constant for different interactions. Thus C is constant for gravitational interactions, C is a different constant for strong interaction, C is a different constant for electromagnetic interactions, and C is a different constant for weak interactions. By the right choice of the C's, $G_{\mu,\nu}$ can explain the sructure of galaxies and the accelerated expansion.

References

[1] Ronald Adler et al *Introduction To General Relativity* McGraw-Hill 1975 pp 344-348

[2] Charles Misner et al *Gravitation* Freeman And Company 1973 pp 404-407

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