

# Modern SpaceTime and Unified Field Theory

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January 30th 2007

## Modern SpaceTime (MST) and Unified Field Theory

To arrive at how MST together with General Relativity (GR) can produce a Unified Field Theory (UFT), we'll analyse "Power". The term "UFT", is meant in a limited classical way, to show an intimate connection relating gravitation and electricity.

At this site are articles about MST, <http://physics.trak4.com> that I'll ref to.

In accord with the above ref, in the \*MST Definition of Mass\* and the \*MST Definition of Planck's Constant\*, "mass" is defined by the covariant 4-vector Energy-Momentum component,  $P_0$ , that mass will be represented by a quantity of energy.

For the purposes herein, let  $P_0 = 1$  Joule and  $x^0 = 1$  second.

Set Power to, (I'll use 'W' to respect Mr. Watt),  $Power = W_{00} = energy/time = P_0/x^0$ .

That Power ' $W_{00}$ ' transforms as ' $g_{00}$ ', IOW's they're identical except for constants.

Consider the product of two potential's,  $A = a/r$  and  $B = b/r$ , with 'a' and 'b' being charges.

Set  $r = ct = x^0$ , then  $A * B = a * b/(x^0 x^0)$ , and is equivalent to Power ' $W_{00}$ '.

In the above link, "GR applied to a Charge Couple" in Eq.(2) you'll find  $g_{00} = 1 - A * B$ , with  $a * b/r = energy$  and then that energy becomes Power when expressed as  $(a * b/r)/(ct) == a * b/(ct)^2$ . From that, the article finds gravitational effects, unified with electrical Power, by  $g_{00} = 1 - W_{00}$ .

Conclusion: MST, is in accord with the GR/UFT solution connecting electricity and gravitation.

PS: A sample problem, a 'marshmallow' Gedanken. I like this couple,

[http://en.wikipedia.org/wiki/Hi\\_and\\_Lois](http://en.wikipedia.org/wiki/Hi_and_Lois)

Set two identical 100 watt lasers on a planet vertically directed. Lo is on the surface and cooks her marshmallow with 1 of the lasers. Hi is located 186,000 miles (1 light second)

above Lo, and cooks his marshmellow with the laser being 'red-shifted' to 99 watts at his altitude.

In that 1 second interval (186,000 miles) as the laser went up to Hi, both the Power ' $W_{00}$ ' and the metric ' $g_{00}$ ' changed by  $\Delta g_{00} = -\Delta W_{00}$ , each over 1 second.

In MST (post 1983) we now use light-waves like lasers to do our surveys, and it would be a matter of philosophy to disentangle our 'measurements' from 'reality', meaning that  $\Delta g_{00} = -\Delta W_{00}$  is \*the same thing\*.

The article, 'GR applied to a Charge Couple' in the ref'd link, provides how GR together with MST produces a classical UFT,