Temporal Curvature, Gravitation's Mediator

sgm, micheal@msu.edu, 2018/JUN/20

A personal aside before we begin: "my" room here can be characterized by several colloquialisms: "rat's nest", "organized chaos", etc. However, my mind is another matter: more like a roller-coaster with no safety bars jumping its tracks. So, the following is, how shall I say it, tedious to say the least.

We know time is unidirectional and unidimensional, by inspection. But concurrently, we also know it ***bends***, according to Relativity. I "wasted" *significant* time of my precious life developing a 2D theoretical framework for time *assuming* it needed *another* dimension to "curve into". Over time, I realized that was ***overkill***.

In order to accommodate analysis in: relative measure / scale / size — and — differentials / integrals / rates, we *minimalistically* ***only*** need the theory of unidimensional metric spaces.

In more precise terms, we need a **1D space** and a **measure** on that space: {$\mathcal{S}$, m}, $\mathcal{T}$.

It's better we *don't* visualize m as a second or Planck-unit. That's obfuscating. Let's label it *canonical-m* for the conjugate implications. Here, I'm decidedly ***NOT*** implying time is complex; I'm simply borrowing convenient terminology *in order to deal with* ***negative-curvature***.

[Aside: yes, it's true $\mathcal{T}$ is a complex metric space. But that concept is a *theoretical* ***artifice*** created by human beings *attempting to understand* what we *experience* as unidirectional unidimensional bendable *time*.]

Now that we have $\mathcal{T}$, we can move forward with differentials and relative bends. We define the infinitesimal *dt* to equal the traditional limit of delta-t as delta → 0. Similarly, using m from $\mathcal{T}$, we can now ***compare bends*** first by sign:

$b_1 = -b_2$ iff b_1 is the *conjugate opposite* of b_2
$b_1 > b_2$ iff $|b_1| > |b_2|$ b_1, b_2 have *like-sign*
$b_1 = b_2$ iff $|b_1| = |b_2|$ b_1, b_2 have like-sign

In words, a bend is *conjugate to* another when their c-magnitudes have *opposite sign*, a bend is greater than another bend when the *canonical-magnitude* is greater, and two bends are *equal* if-and-only-if their *canonical-magnitudes are **equal** and* they have like-sign.

More explicitly, $\mathcal{T}$ = {$\mathcal{S}$, canonical-m, t, *dt*, $\mathcal{C}$} where t is our more familiar time-variable that we can use in everyday calculations, $\mathcal{C}$ is the set of 3 statements above, and the others as previously defined.

If you're having trouble visualizing this, *think of t as a **letter** inside the **envelope*** $\mathcal{T}$ - t, set-wise.

The point of making everything explicit and precise is so we can address ***gravitational time-dilation/contraction as a function of temporal curvature*** *point-time-wise*:

$C_t(\mathbf{x}, t, b_1) = C_t(\mathbf{x}, t, b_2)$ iff $b_1 = b_2$
the ***temporal curvature of*** two, not necessarily distinct, points in space-time are *equal* if-and-only-if their ***bends** are equal*

$C_t(\mathbf{x}, t, b_1) > C_t(\mathbf{x}, t, b_2)$ iff $b_1 > b_2$ gte 0
the ***temporal curvature of*** one point in space-time is *greater than* another if-and-only-if its ***bend** is greater*

$C_t(\mathbf{x}, t, b_1) = -C_t(\mathbf{x}, t, b_2)$ iff $b_1 = -b_2$
the ***temporal curvature of*** one point is *opposite* that of another iff their ***bends** are opposite* in sign but equal in magnitude

Those three statements define *temporal curvature* as a *function of **bend*** with $\mathcal{C}$ above. We finally address gravitational *time-dilation/contraction as a function of* ***temporal curvature***:

$G_t(., C_1) = G_t(., C_2)$ iff $C_1 = C_2$
the gravitational time-dilation/contraction of two, not necessarily distinct, points in space-time are equal if-and-only-if their temporal curvatures are equal

$G_t(., C_1) > G_t(., C_2)$ iff $C_1 > C_2$
the gravitational time-dilation/contraction of one point in space-time is greater than another if-and-only-if its temporal curvature is greater

$G_{t-d}(., C_1) = 1/G_{t-c}(., C_2)$ iff $C_1 = -C_2$ G_{t-c} ne 0
the gravitational time-dilation of one point is one-over time-compression of that of another if-and-only-if their temporal curvatures are opposite but equal in magnitude

To recap, 3 statements define ***bend***, $\mathcal{C}$
3 statements define ***temporal curvature*** on bend, $\mathcal{C}'$
3 statements define ***gravitational time-dilation /compression*** on $\mathcal{C}'$, $\mathcal{G}$

So $\mathcal{T}$ allows $\mathcal{C}$ allows $\mathcal{C}'$ allows $\mathcal{G}$
which implies **{$\mathcal{S}$, m} allows $\mathcal{G}$.**

Gravitation can be derived from a **1D space** with *appropriate* **measure.**

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Note: this theory was developed 30 years ago over a period of four days; I've lost my original derivation and had to reconstruct this from memory in the last few hours.