

A Speculative Derivation of Gravity from Charge Using an Arrow of Time (*version 2*)

Copyright © SR. Bowman July 2008
sr.bowman @ yahoo.co.uk

Abstract

Curved spacetime matching +g was seen when analysing dynamics of charge-transfer at the atom, using an “arrow of time” in the context of a pressurised ether model. The method is mechanistic, conservative and is an independent route to the model derived by Lew Price[1]. The minimum to derive +g and -g is given. The model (ZGV) is broad, useful and more developed than shown here.

Quantised Space

While exploring a modified ether model in a 3D Universe the author saw an arrow of time: Let spacial volume be quantised at small scale. Quanta define / set the scale factor or “size” of space. Let each quanta be pressurised. Let the P.V product of quanta define constant energy (conserved as the Universe expands: P drops, V increases). Quanta thus scale expands, at a rate set by inner / outer pressure differentials. // *this forms an “inflationary Universe” which in our age is vastly expanded*

Time as a Virtual 4th Dimension

Expanding plastic 3D quanta draw a virtual 4th D (a tesseract), formed of 3D space incarnate at a size, moving old => new sizes sequentially, ever in the expanding direction i.e. from “the past” via an instantaneous “now” to “the future”. Time is seen as a virtual dimension, driven by expansion. Environmental vs. internal pressure differences set the rate of expansion, so defining local tempo. Note: 3D space is the integral of tempos i.e. age >> space. Space and time are deeply married.

Particles

From other ether-like works: Let massy particles e.g. protons contain vast numbers of quanta; let electrons hold a deficit or zero. Let particles have near-c moving “spin-walls” i.e. relativistic boundaries. Temporal distortions at spin-walls make them analogues of event horizons. Q: is there an analogue of Hawking radiation too? If yes, then spin-walls slowly “leak”. Let protons exhale quanta, electrons inhale. Proton-held quanta are samples of the early (un-expanded) Universe** i.e. quanta are PV(hi, lo) // read as: Pressure P is high, Volume V is low.

That positive => negative flow of “ether” map to Maxwell's displacement current was known early, yet discarded by Maxwell's team. Being unfamiliar with such mechanisms as information hiding by event horizons and Hawking radiation, in September 1878 FitzGerald deemed the exhale / inhale events impossible[2], confusing a flow from {excess to deficit} with {creation and destruction}.

For this paper: let quanta flows be “charge” and maps of flow pressure “the electric field”. The author found that curved spacetime and movement matching +g and -g can now be derived.

For +g Attractive Gravity (found near masses)

Consider a Hydrogen atom. The following is observed:

1. An electron “inhales / eats” a spacial quanta. There is an immediate local volume loss of V .
2. Exterior spacial quanta move towards the atom, to occupy the volume shortfall i.e. V reduces.
3. The proton emits a young** quanta Q i.e. possesses $PV(h_i, \text{approx. } 0)$. Immediately Q expands.
4. During Q expansion, process (2) continues, replacing missing volume - the deficit reduces.
5. The quanta Q now occupies available volume: $\{V \text{ less that replaced by spacial inflow (2)}\}$. Q is $PV(h_i, \{V - \text{spacial inflow}\})$. Q does not match local parity; it is overpressurised and volume short.
6. All volume is occupied - Q excess pressure makes it expands vs. neighbours, “overpressuring” them and limiting their growth. Average local tempo (hence “time”) about the atom slows.

Space about the atom is now populated with slowed-tempo quanta - expanding less quickly, all are “smaller” than far removed quanta, setting a reduced dimensional scale matching “curved space”. This is a dynamic process. Space flows to the atom (2) and tempo slows (6). Both effects diminish by inverse square and nearly balance. The author notes that as the Universe ages, effects (2+4) become extended. If this is indeed gravity, it becomes stronger over long ages.

+g gravity is a 2-part dynamic. Space flows to mass (“to-mass recession”), suffering a retardation of tempo due to increasing compression. A watch adrift in space by a planet “falls” to the planet, carried by the flow (to-mass recession) of space. The watch tick-tempo slows as spacial pressure rises. Per experienced (ever-extending) tick, the watch moves further, so experiencing acceleration.

Gravity is here seen as a cloud or fog of “spent charge”, forming a giant infalling sphere about mass, like a vast standing wave. Gravity is determined by rate of spacial inflow and gradient of pressure increase. Propagation is set by local conditions; it is “outside of time”. As such, gravity has arbitrary speed, from 0 to infinite - there is no c limit. Gravity is an extreme macro-scale effect - the cloud / standing wave may be of stellar size. No carrier other than space is needed.

The author notes the model has arrived at a similar 2-part dynamic conclusion as Lew Price[1].

For -g Repulsive Gravity (found in deep space)

Consider two watches separated by many quanta Qs in deep space, uniformly surrounded at great distance by scattered masses e.g. galaxies. Pressure-gradients cancel; recession does not. The to-mass recession (2) is expansive to Qs , raising Qs tempo. The watches run “fast” and move apart. Such raised local tempo is here termed “Time Distension”, the inverse of Time Dilation.

The ZGV Model

The model is called “Zepto Gauge Variance” aka “ZGV”, as it is thought that quanta expand in the region of 1 part in 10^{21} per second. Other gauge operations (rotation and translation) remain invariant; ZGV refers to dimensional scale. ZGV-style {expanding quanta of space} are termed “motes”, so to distinguish the ZGV form and other type of ether.

In ZGV, all forces are explicitly unified, are contextual manifestations of curved space and are a

consequence of the rule “seek out lowest Potential Energy” applied at the smallest possible scale.

Electricity is flow; magnetism is curled (handed) drag, clockwise circling views representing North. The viewer's position defines perceived rotation i.e. sets pole-ness. The interested reader now has enough to derive much of electrodynamics in purely pictorial form, making use of the simple rule “minimised PE”.

An admittedly naive approach, ZGV addresses how gravity “leaves” a Black Hole when light cannot; why present gravity wave detectors see nothing (they are in-frame to macro-scale phenomena) and finds the Allais Pendulum effect, also predicting a local tempo retardation to occur (which may be tested).

ZGV is able to make many interesting predictions which map to physics “mysteries”.

Other ZGV papers are in preparation.

References

[1] Lew Price and Mart Gibson - a two-part gravity of “flow and funnelling”. See “Behind Light's Illusion” 2nd edition, Book Two - Gravity ISBN 0917578244 [www.lewpaxtonprice.us/bli2.htm]

[2] FitzGerald's view: “...*this required a continual creation and annihilation of ether that was clearly impossible if it was to be regarded as a real substance*” so he dismissed the idea. See “The Maxwellians” page 17 by Bruce J. Hunt, pub. Cornell Paperbacks ISBN 0-8014-8234-8