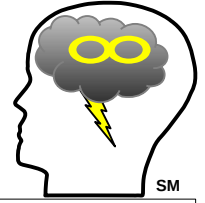


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# On Applying the Dium TOE

## A Communication of the Intractable Studies Institute

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**Many complex things in Physics become simpler in the Dium TOE.**

- 1) The hardest question "What is natural dimension made of?" is answered: **continuous natural dimension** object. It is a natural dimension object which is in fact the universe. See <http://intractablestudiesinstitute.org/c/TheoryOfEverything.pdf> and <http://intractablestudiesinstitute.org/c/SpaceIsANaturalObject.pdf>.
- 2) "**Nothing**" is distinguished between Strong and Weak Nothing. Weak Nothing is what most people mean when they say "nothing", such as nothing in the box which is yet full of air, or nothing in the box in space except 1 trillion neutrino particles passing thru it. Weak Nothing = dium empty of particles. Strong Nothing = Not Even Dimension (NED) itself.
- 3) **Dark Energy's** energy component is simply natural dimension itself (dium) with Axiom 3 that defines dium AS energy, not merely HAS energy. The mechanism of accelerating expansion of space could be merely a perceptual effect of time slowing down as space expands/thins out. Spatial thinning may be analogous to time slowing, as time slows in higher gravity.
- 4) **Dark Matter** or "excess gravity" is the remnant static dimple wave (Def19) left over when its particle is separated from it. Alternatively it could be gravity as space thins out from expanding universe.
- 5) **Neutrino Oscillations** are the dium dynamic dimple wave Def18 (oscillating compression/decompression of space itself). Standard particles with charge aren't mass-dynamic, they become static with constant mass, but dynamic compression cycle is dynamic mass. Charge may prohibit dynamic mass oscillations.
- 6) The **3 Generations** of Matter in the Standard Model are likely a **3-wave train in time**, somewhat analogous to a tsunami wave train, but may be longitudinal, perpendicular, torsional, or 2 or all 3 simultaneously. It may be that fewer and more generations were/are possible in the past/future.
- 7) **Gravity** is a density variation in the dium usually centered on a particle. Together they are called a particle with mass. The mass is expressed entirely in the warp, not the particle. The **Higgs field** permeating all space is merely dium with energy from Axiom 3 (A3).
- 8) **Charge** is a static twist in natural dimension. The shape is TBD.

- 9) **Mass** is a measure of the amount of warp/decompression of dium.
- 10) Particle **Spin** may be an actual rotation about the time axis.
- 11) **Inertia** is the resistance to instantaneous motion change of a particle when struck by another particle because the extended warp of dium would have to instantly displace. But warps attract warps. It takes time for the particle to shift its warp, the greater the warp the more time it takes to displace that larger warp volume. However, when warps attract warps the particle is displaced without inertial effect because the entire warp is displaced simultaneously.
- 12) **Relativity** is supported within the Dium TOE, except that there is defined a rest velocity against space itself. An Experiment in Relativity shows how to find rest velocity against space.
- 13) **Quantum Mechanics** is a **Predictor Class** model of discrete things, not of continuous natural dimension. QM can predict what will happen, but not what reality is, nor should it be required to.
- 14) **String Theory** assumes multiple 1-D string loops which vibrate, but the 3-D dium can vibrate too. The Dium TOE's rich set of properties may be able to subsume ST vibrations without 1-D Strings.
- 15) **Multi-Verse** cannot be refuted with the Dium TOE.
- 16) **Simulation Universe** is reduced to its base with **Def13**.
- 17) The energy for **Many-Worlds** becomes trivial (A3), but a larger problem is revealed in **Combinations C** of all the probable states, possibly the largest and fastest growing number ever anywhere.
- 18) The problem of matter and anti-matter pairs of particles **appearing from nothing** is solved as these do not emerge from Strong Nothing (NED), but emerge from Weak Nothing which is dium itself. Ditto in reverse, **annihilation** returns back to the dium. Matter-antimatter particle annihilation may create a temporary warp of dium. When directed in front of a spaceship, that will attract the ship forward, see <http://intractablestudiesinstitute.org/c/AdvancedSpaceshipDesign.pdf>.
- 19) The **Strong and Weak forces** of the **SM** might be derivable.
- 20) The **Two-Slit** experiment might be explainable when factoring in the dium to that experimental.
- 21) **Entanglement**: Cut 1cm wire in 2. Measure 1. Now know other size.