


## The zero-dimensional physical theory (IV): zero-point field dynamics

Stephen H. Jarvis 

Xemdir, web: [www.xemdir.com](http://www.xemdir.com)

email: [stephen.jarvis@xemdir.com](mailto:stephen.jarvis@xemdir.com)

**Abstract:** Here the next step is taken for the zero-dimensional physical theory in proposing key experiments for the interaction of the three derived timespace fields, namely EM, mass, and zero-point gravity, specifically in demonstrating the zero-point gravity field as derived from the absolute (flatline) destructive interference resonance of the EM field, describing how this zero-point gravity field is repulsive to both an EM field and mass field, specifically repulsive to static charge and magnetic fields, creating greater kinetic and potential energy gradients for charge and magnetic fields neighbouring the EM destructive interference resonance process. Further to such, this zero-point gravity field is derived to be zero-point inertial and thus non-inertial, despite causing inertial effects on both charge and magnetic fields, and therefore capable of causing motion for both charge and magnetic fields away from the progenitor zero-point inertial reference. The utility of this zero-dimensional physical theory shall now therefore be judged on its ability to make new predictions to be verified by new observations.

**Keywords:** Xemdir field; Xemdir field generator; Temporal Mechanics; zero-point energy; timespace; zero-dimension

## 1. Introduction

This paper follows directly from the previous papers of the Temporal Mechanics zero-dimensional number theory [1-52]<sup>1</sup>, specifically paper 52 [52] detailing the graphing and thence practical nature of the zero-dimensional physical theory [50][51]. Further to such, here in this paper will be proposed new mechanisms of proof for the zero-dimensional philosophy [48], number theory [49], and associated physical theory [50][51] that forms the basis for paper 52 [52].

A key component to the zero-dimensional physical theory description<sup>2</sup> is the conservation of energy mandate for the three derived field force effects of  $EM(\theta)$ ,  $EM^{DIR}$  (mass and emergent gravity,  $\theta_\phi$ ), and  $EM_X^{DIR}$  (zero-point gravity, zero-point energy,  $\theta_\phi$ ). Here the idea of the conservation of energy for  $EM(\theta)$  and  $EM^{DIR}(\theta_\phi)$  in relation to  $EM_X^{DIR}(\theta_\phi)$  will be described and then proposed to be tested in 3 key experiments.

In achieving such, this paper is sectioned as follows:

1. Introduction
2. The paper context
3. The Xemdir (zero-point gravity) field
4. The Xemdir field generator proposal
5. The Xemdir field generator materials and proposed results
6. The Xemdir field generator interpretations
7. Conclusion

Fundamentally, the baseline  $EM_X^{DIR}$  (zero-point gravity,  $\theta_\phi$ ) field phenomenon will be described to affect the  $EM(\theta)$  and  $EM^{DIR}(\theta_\phi)$  features of charge and magnetism in observance of a conservation of energy precedent. Although it is understood that there exist both an electric permittivity  $\epsilon_0$  and magnetic permeability  $\mu_0$  of space<sup>3</sup>, here will be demonstrated how the generation of a  $EM_X^{DIR}(\theta_\phi)$  field can create charge and magnetic field potential and kinetic energy effects by the complete ( $X$ ) destructive interference resonance ( $DIR$ ) effect of an  $EM$  field.

## 2. The paper context

One may ask how this proposal has gone under the radar of the current research portfolios of modern physics. The answer there underlies the inherit problem that exists in the very design of

---

<sup>1</sup>[1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16][17][18][19][20][21][22][23][24][25][26][27][28][29][30][31][32][33][34][35][36][37][38][39][40][41][42][43][44][45][46][47][48][49][50][51][52].

<sup>2</sup> [50]: p7-17.

<sup>3</sup> As explained in paper 50 ([50]: p10-12) as a basic repulsive effect of the zero-point energy field of space repelling the charge and magnetic field components of  $EM$  and associated  $EM-EM^{DIR}$  interaction.

physics. There, Temporal Mechanics finds there to be two fundamental flaws in physics, one regarding the mathematical and theoretic approach, the other in relying solely on the results thereof as a description of reality (not to be under-estimated), both of which then are poised to miss the idea of zero-point gravity<sup>4</sup>.

The approach physics takes to measuring physical reality to then theorize its existence is based primarily on the ideas of mass, linear-time, and 3d-space. Mass in its crudest sense is quite basically plotted onto a 3d-space grid with linear-time as points on a 3d-graph. Mass in fact is given the status of a point in its ultimate sense. Although of course a planet is not considered as a point, yet the closer one gets to the infinitesimal limits of the mass/3d-space/linear-time lens the more physics dallies with the ideas of points representing physical reality. All of such was questioned in the previous paper, paper 52 [52], highlighting the flaw of such a process with its zero-dimensional alternative. The proposal here therefore is to test the zero-dimensional theory proposal<sup>5</sup> and to have that theory tested by the 3 key experiments proposed here.

### 3. The Xemdir (zero-point gravity) field

The zero-dimensional number theory took the problem<sup>6</sup> of assigning numbers to non-zero physical phenomena (dimensional phenomenal entities) to then propose a more accurate and exact process of applying numbers (0 and 1) to zero-dimensional space and zero-dimensional time respectively. There, to describe how the zero-dimensional number theory is scaled to physical phenomena requires one to mention those proposed scaling pillars, namely the charge of the electron  $e_c$  and the speed of light  $c$ .

Of note with the zero-dimensional physical theory description is how the proposed  $EM_X^{DIR}$  (gravity,  $\theta_\phi$ ) field<sup>7</sup> creates an enhancement to the potential and kinetic features of any neighbouring/local  $EM$  ( $\theta$ ) and  $EM^{DIR}$  (mass,  $\theta_\phi$ ) fields, and thence enhancement to the potential and kinetic energy features of any neighbouring/local charge and magnetic fields.

In short, the absolute/complete ( $X$ ) destructive interference resonance ( $DIR$ ) of  $EM$  must have energy conserved in that process of being reduced to 0 as the  $EM_X^{DIR}$  ( $\theta_\phi$ ) field, thence having that energy translated to neighbouring  $EM$  ( $\theta$ ) and mass ( $EM^{DIR}$ ,  $\theta_\phi$ ) fields. Such a process of energy translation would represent an enhancement of the kinetic and potential energy features of  $EM$  ( $\theta$ ) and  $EM^{DIR}$  ( $\theta_\phi$ ) fields neighbouring the  $EM_X^{DIR}$  ( $\theta_\phi$ ) field generation. Here therefore the disintegration of an  $EM$  field through an absolute ( $X$ ) destructive interference resonance ( $DIR$ ) process<sup>8</sup> is proposed, and

---

<sup>4</sup> To be described forthwith.

<sup>5</sup> [48][49][50][51][52],

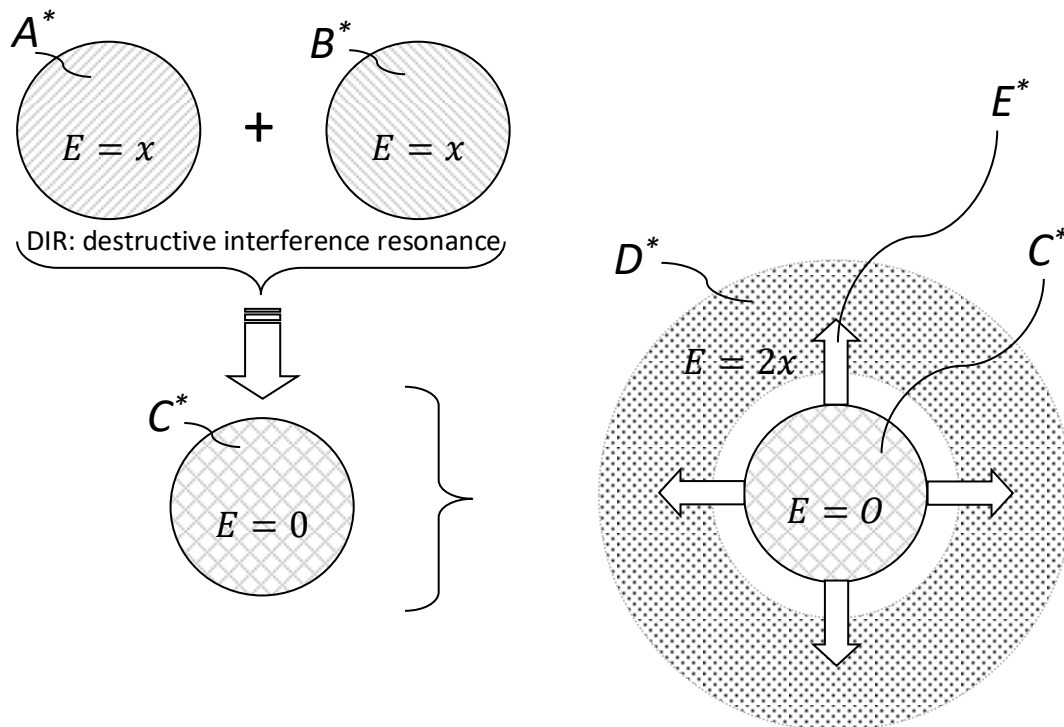
<sup>6</sup> [51][52].

<sup>7</sup> [52]: p40-46.

<sup>8</sup> [52]: p39-45.

thence how that energy is conserved is described and thence how such is proposed to be executed in the form of experiments.

Although particle pair production is proposed to occur via a *partial* destructive interference resonance (*DIR*) alignment of two opposing *EM* fields resulting in a mass-field ( $EM^{DIR}, \theta_\phi$ )<sup>9</sup>, such is not the proposed process here. The proposed process here is the *absolute* ( $X$ ) destructive interference resonance (*DIR*) of two opposing *EM* waves<sup>10</sup>. Consider figure 1.



**Figure 1:** An illustration of how the energies of two *EM* fields, each  $E = x$ , are transferred to the locality of any local *EM* or  $EM^{DIR}$  fields as  $D^*$  ( $E = 2x$ ) given the  $EM_X^{DIR}$  field is proposed to be zero-point ( $E = 0$ ).

In figure 1 note that  $E^*$  is the repulsive effect on *EM* ( $\theta$ ) and  $EM^{DIR}$  ( $\theta_\phi$ ) by  $C^*$ , namely by the  $EM_X^{DIR}$  ( $\theta_\phi$ ) field, thence leading to an enhancement of the energy properties of those *EM* ( $\theta$ ) and  $EM^{DIR}$  ( $\theta_\phi$ ) fields, and thus associated traits such as charge and magnetism, enhancements of both a potential and kinetic in nature, noting that the  $EM_X^{DIR}$  ( $\theta_\phi$ ) zone,  $C^*$ , is zero-point inertial and thus non-inertial.

<sup>9</sup> [52]: p35-39.

<sup>10</sup> [52]: p39-45.

The question asked here is how the local region  $D^*$  is enhanced. There, potential energy is the body's energy by virtue of its position relative to other potential positions, of the stresses within itself, of electric charge, and other factors, whereas kinetic energy is that which a body possesses by virtue of being in motion. The question therefore is how these features are proposed to be enhanced.

The key to that enhancement process is to first understand how the scaled zero-dimensional number theory describes the  $EM_X^{DIR}(\theta_\phi)$  field level ( $C^*$  in figure 1) regarding charge and magnetic fields ( $D^*$  in figure 1)<sup>11</sup>. There, it was described how a 0Hz static electric field and associated magnetic component in the event of relative motion of that static electric field requires a medium that is a natural 0Hz static charge carrier, as one that also perfectly underwrites the constancy of light  $c$  for all frames of reference, together with that 0Hz field being related to an  $EM(\theta)$  field. The answer provided there<sup>12</sup> described how the  $EM(\theta)$ , mass ( $EM^{DIR}, \theta_\phi$ ), and gravity ( $EM_X^{DIR}, \theta_\phi$ ) fields relate with each other, as follows:

- (i) The  $EM(\theta)$  analogue temporal wave function with electric and magnetic flux features ([52]: p11-31).
- (ii) Charge as a feature of a mass field ( $EM^{DIR}, \theta_\phi$ ), namely a mass field being a partial destructive interference resonance of an  $EM(\theta)$  field, and thus mass ( $EM^{DIR}$ ) having partial  $EM(\theta)$  qualities as charge and magnetic moments (temporal components).
- (iii) Charge for mass can be of two forms, namely positive and negative, as much as the electric moment of the  $EM(\theta)$  temporal wave function can be of one of two temporal moment orientations.
- (iv) Both  $EM(\theta)$  and mass ( $EM^{DIR}, \theta_\phi$ ) fields are associated to a more fundamental field responsible for the effect most commonly understood as gravity, the proposed  $EM_X^{DIR}$  field which has no charge or magnetic moments.
- (v) Mass thence is proposed to ultimately have properties absent entirely of charge and magnetic moments, as has been derived for the neutrino<sup>13</sup>.
- (vi) The constituent particles (quarks) of the subatomic particles (hadrons, the neutron and proton) would also possess electric and magnetic properties combining to result in the known hadron particle charge (proton) or non-charge (neutron) features<sup>14</sup>.
- (vii) The speed of  $EM(\theta)$  as  $c$ , as the condition of  $EM(\theta)$ , is derived to be constant for any frame of motion reference for  $EM^{DIR}(\theta_\phi)$  and thus charge [45].
- (viii) The motion of mass-charge relative to another object creates an  $EM(\theta)$  induction condition given the  $EM(\theta)$  condition of  $c$ .
- (ix) The  $EM_X^{DIR}(\theta_\phi)$  field as a zero-point energy field provides a certain *resistance* to  $EM(\theta)$ , manifesting as a value of electric permittivity  $\epsilon_0$  and magnetic permeability  $\mu_0$ .

---

<sup>11</sup> [50]: p11-14.

<sup>12</sup> [50]: p11-14.

<sup>13</sup> See paper 42 [42] on the electron degeneracy process explaining why neutrinos have no charge characteristics.

<sup>14</sup> To be explored in a subsequent paper detailing the aetiology of particle spin.

- (x) The  $EM_X^{DIR}(\theta_\phi)$  field as a zero-point energy field provides a certain *resistance* to  $EM^{DIR}(\theta_\phi)$  manifesting as gravitational free fall.
- (xi) In the absence of the  $EM_X^{DIR}(\theta_\phi)$  being able to repel the  $EM(\theta)$  and  $EM^{DIR}(\theta_\phi)$  fields, the  $EM_X^{DIR}(\theta_\phi)$  field would thus fundamentally represent a destructive influence to the  $EM$  and  $EM^{DIR}$  fields<sup>15</sup>.

In therefore noting that the  $EM_X^{DIR}(\theta_\phi)$  field is proposed to be a baseline 0 energy and temperature value, when therefore  $EM(\theta)$  becomes a reagent in the generation of an  $EM_X^{DIR}(\theta_\phi)$  through an absolute ( $X$ ) destructive interference resonance ( $DIR$ ) process, the following is proposed to occur:

- (xii) Greater potential energy gradient for  $EM(\theta)$  and  $EM^{DIR}(\theta_\phi)$  local fields (and thence charge and magnetism) in the vicinity ( $D^*$  of figure 1) of the generated  $EM_X^{DIR}(\theta_\phi)$  field ( $C^*$  of figure 1).
- (xiii) Greater kinetic energy gradient for  $EM(\theta)$  and  $EM^{DIR}(\theta_\phi)$  local fields (and thence charge and magnetism) in the form of a natural repulsion of the  $EM_X^{DIR}(\theta_\phi)$  field against the  $EM(\theta)$  and  $EM^{DIR}(\theta_\phi)$  local fields in the vicinity ( $D^*$  of figure 1) of the generated  $EM_X^{DIR}$  field ( $C^*$  of figure 1).

The question then needs to be asked, how can the idea of a  $EM_X^{DIR}(\theta_\phi)$  field as a zero-point field be more intensely concentrated as a greater concentration of zero-point energy?

The answer to this is to consider that the  $EM_X^{DIR}(\theta_\phi)$  field ( $C^*$  of figure 1) would be a vaster timespace zero-point field thence extending itself as such, simply by *expelling* any extraneous fields ( $D^*$  of figure 1) from its pure  $EM_X^{DIR}(\theta_\phi)$  field status, and thus also ultimately expelling the source of that  $EM(\theta)$  or  $EM^{DIR}(\theta_\phi)$  field trying to generate the  $EM_X^{DIR}(\theta_\phi)$  field, as per (xii)-(xiii).

And so, such is now the focus of this paper, namely proposing a mechanism of developing a  $EM_X^{DIR}(\theta_\phi)$  in then *by* that proposed mechanism *showing* such creates:

- (xiv) A potential energy gradient effect for  $EM-EM^{DIR}$  (for charge and magnetic fields).
- (xv) Thence the kinetic repulsive effect for  $EM-EM^{DIR}$  (for charge and magnetic fields) in bringing into effect point (xiv).

Although potential and kinetic energy  $EM-EM^{DIR}$  *charge* effects would imply some form of plasma field and/or arcing effects and thence be difficult to measure, namely owing to the *discharge* of energy proposed to be in play, the utility of this proposed effect of the Xemdir ( $EM_X^{DIR}$ ) field generator should not be overlooked, namely in demonstration of the potential/kinetic energy effects of a  $EM_X^{DIR}(\theta_\phi)$  field on both  $EM-EM^{DIR}$  magnetic and electric fields. There, it is proposed that electrical arcing

---

<sup>15</sup> See (xxxvii)-(xxxix).

generation (and/or plasma generation) can be used as a catalyst for atomic reactions, primarily for atomic compounds and elements<sup>16</sup>, especially given that if an  $EM(\theta)$  or mass field is in contact with a  $EM_X^{DIR}(\theta_\Phi)$  field (and thence directly destructively interfered with by it), then that  $EM(\theta)$  and mass field ( $EM^{DIR}$ ) would disintegrate, namely approach 0 as per (xi), and then yet be re-built as per (xii)-(xiii), and thus describe a natural type of chemical reaction process, yet proposed here to be a more enhanced atomic/chemical reaction process, an ultra-catalytic<sup>17</sup> process.

#### 4. The Xemdir field generator proposals

As per the Temporal Mechanics zero-dimensional physical theory proposal, the generation of a  $EM_X^{DIR}$  field requires the two features of an  $EM(\theta)$  temporal wave function be brought into a flatline destructive interference effect<sup>18</sup>:

- (xvi) The electric component of the  $EM(\theta)$  temporal wave function as the standard  $\pi$  (temporal wave function sinusoidal) wavelength component.
- (xvii) The magnetic component which has been derived to be a factor of  $\sim \frac{4.583}{\pi}$  compared to that of the temporal sinusoidal wavelength  $\lambda$  of the temporal wave function ( $\theta$ ).

Such scaling was derived in paper 2<sup>19</sup> regarding the fundamental construction of the temporal wave function, as per equations 3-6 and figures 9-13 there<sup>20</sup> and further clarified in paper 42<sup>21</sup>, thence graphed in paper 52<sup>22</sup>. The proposal here is to bring two  $EM(\theta)$  fields in opposition with one another in a complete destructive interference resonance (DIR) manner via a dual open-ended chamber scaled precisely to the RF signature of the  $EM(\theta)$  wave function, and to execute three things:

- (xviii) Introduce a magnetic field component into the vicinity of that proposed generated  $EM_X^{DIR}(\theta_\Phi)$  field for that  $EM_X^{DIR}(\theta_\Phi)$  field to be then demonstrated to repel the magnetic field<sup>23</sup>.
- (xix) Introduce an electric field component into the vicinity of that proposed generated  $EM_X^{DIR}(\theta_\Phi)$  field for that  $EM_X^{DIR}(\theta_\Phi)$  field to be then demonstrated to repel the electric field<sup>24</sup>.

<sup>16</sup> In the creation of new compounds and alloys, see (xxxv)-(xxxvii).

<sup>17</sup> See (xxxvii)-(xxxix).

<sup>18</sup> [52]: p39-45.

<sup>19</sup> [2]: p1-14.

<sup>20</sup> [2]: p11-14, eq3-6, fig9-13.

<sup>21</sup> [42]: p39-41.

<sup>22</sup> [52]: p39-45.

<sup>23</sup> See figure 2.

<sup>24</sup> See figure 3.

- (xx) Introduce an atomic or chemical compound to the  $EM_X^{DIR}(\Theta_\Phi)$  field in the chamber and thence test for an atomic or chemical ultra-catalytic reaction process, as a proposed process of plasma induced fission (destruction) and fusion (reconstruction)<sup>25</sup>.

Such will now be described in the form of points [0001]-[00085] and figures 2-6, introduced by the following abstract:

*An exemplary Xemdir (baseline EM destructive interference resonance) field generator produces a  $EM_X^{DIR}$  field in a resonance chamber which is scaled according to the  $EM_X^{DIR}$  field theory. Identical aerials are positioned equally from the centre of the chamber producing EM fields opposing each other. A radio frequency (RF) power source generates a high energy RF field that is fed in-phase to the aerials, each RF field for each aerial being in-phase with the other. The cables and aerials may conversely be replaced with waveguides connecting the RF power source to the resonance chamber executing the same resultant function of the cables and aerials. The resonance chamber and the power source are attached on a bulkhead. The generated zero-point inertial  $EM_X^{DIR}$  field inside the resonance chamber enhances the kinetic and potential energy features of any local charge and magnetic fields, thence both causing thrust for such local charge and magnetic fields away from the  $EM_X^{DIR}$  field, together with providing an ultra-catalytic basis for atomic and chemical reactions for any local gaseous, liquid, or solid particles and chemicals.*

- [0001] The propulsion of vehicles and various craft has been achieved in various ways such as via fuel combustion, electricity, nuclear reaction, and so on.
- [0002] Common powering mechanisms include the internal combustion engine, electric motors, and rocket propulsion devices, yet only rocket propulsion thus far seems feasible for space travel; alternative and more efficient means for craft propulsion in space is desired, namely either electrical or nuclear means as opposed to the large volumes and weights required for rocket propulsion.
- [0003] The proposed Xemdir field generator apparatus incorporates electromagnetic destructive interference resonance (zero-dimensional) theory in developing zero-point inertial propulsion and associated plasma production for both propelling crafts in space and assisting in delivering chemical reagent fuel supply.
- [0004] A  $EM_X^{DIR}(\Theta_\Phi)$  field is a particular destructive interference of an EM field in a particularly scaled resonance chamber producing a zero-point inertial field and associated local potential and kinetic charge and magnetic field enhancement manifesting as a plasma.
- [0005] The  $EM_X^{DIR}(\Theta_\Phi)$  field as a zero-point inertial field has a repelling effect to an EM field and mass, and thence to both a charge and magnetic field.

---

<sup>25</sup> See figure 4.



- [0006] Detailed information on the  $EM_X^{DIR}(\theta_\phi)$  field is found with the theory proper of papers 42 [42] and 52 [52].
- [0007] The primary application for the Xemdir field generator is for the generation of a repulsive field against  $EM$  and mass, and thence a repulsive effect upon electric and magnetic fields leading to an enhanced potential and kinetic electric and magnetic field effects and thence plasma generation.
- [0008] The secondary application for the Xemdir field generator is for the atomic and chemical reagent use of the generated plasma.
- [0009] The repulsive feature of the  $EM_X^{DIR}(\theta_\phi)$  field can be used as a propulsion mechanism, and the plasma field generation as a catalyst for atomic and chemical reactions.
- [00010] One unique feature of the Xemdir field generator is that it requires no jettison of fuels or combustion materials to produce thrust, making it ideal for space-propulsion devices requiring only electrical and magnetic energy for thrust.
- [00011] Another unique feature of the Xemdir field generator is that by its effect on  $EM$  and mass, and thence on electric and magnetic fields, such an effect can be used as a catalyst for the formation of new atomic isotopes (such as for use in batteries), chemical compounds such as Hydrogen gas (to power standard combustion engines), and new exotic alloys.
- [00012] There are therefore two key utilities of the Xemdir field generator, the first being primarily the development of a zero-point inertial gravitational field thence repelling mass and associated charge and magnetic fields thence resulting in thrust, the second being in providing a potential and kinetic energy boost for that locality of  $EM$  and mass in the form of plasma which can be used as a catalyst for atomic/chemical reactions.
- [00013] In the present thrust utility of the Xemdir field generator, the  $EM_X^{DIR}(\theta_\phi)$  field created in a Xemdir resonance chamber is utilised by exposing it to either a magnetic or electric field in then having the  $EM_X^{DIR}(\theta_\phi)$  field repel the magnetic or electric field noting there is no push-back effect by the magnetic or electric field on the  $EM_X^{DIR}(\theta_\phi)$  field given the  $EM_X^{DIR}(\theta_\phi)$  field is a zero-point inertial field.
- [00014] In the present plasma generation utility of the Xemdir field generator, as a natural by-product of the  $EM_X^{DIR}(\theta_\phi)$  field, the process of utility is to expose the plasma generation to any atomic or chemical compound substance that is considered for atomic or chemical reaction processes.
- [00015] The proposed Xemdir field generation process and associated apparatus may be better understood with reference to the illustration of embodiments thereof as depicted by FIGURE 2, FIGURE 3, FIGURE 4, FIGURE 5, and FIGURE 6.
- [00016] The illustrated embodiment of FIGURE 2 shows a see-through front section view of a Xemdir field generator unit in accordance with an embodiment of the present Xemdir field generator proposal.
- [00017] The illustrated embodiment of FIGURE 3 shows the magnetic thrust application of the said illustrated embodiment of FIGURE 2.

- [00018] The illustrated embodiment of FIGURE 4 shows the electric charge thrust application of the said illustrated embodiment of FIGURE 2.
- [00019] The illustrated embodiment of FIGURE 5 shows the plasma catalyst application of the said illustrated embodiment of FIGURE 2.
- [00020] Referring to the scale of FIGURES 2-5, a Xemdir field generator of the present apparatus schematic proposal can be constructed to be of any of various sizes, depending on its intended application.
- [00021] In the illustrated embodiment of FIGURE 2, The Xemdir field generator includes a radio frequency (RF) power source (1), connecting cables (2), identical RF-compatible aerials (3), a resonance chamber (or cavity) with a particularly scaled length (4), width (5), and height (6), with either closed or open ends (7), and a utility bulkhead (8).
- [00022] In the illustrated embodiment of FIGURE 3 which includes the illustrated embodiments of FIGURE 2, the Xemdir field generator includes a magnet (9) protruding into the chamber (10), and proposed direction of thrust (11).
- [00023] In the illustrated embodiment of FIGURE 4 which includes the illustrated embodiments of FIGURE 2, the Xemdir field generator includes an electrode protruding into the chamber (12) connected by a conducting wire (13) to a charge generator source (14) located on the utility bulkhead (8).
- [00024] In the illustrated embodiment of FIGURE 5 which includes the illustrated embodiments of FIGURE 2, the Xemdir field generator includes a reagent container (16) in the resonance chamber, the reagent container holding solid, liquid, or gas reagent medium, the reagent container with associated inlet (17) and outlet (18) portals for the entry of the reagent medium and exit of resultant medium respectively.
- [00025] The illustrated embodiment of FIGURE 6 proposes the cables (2) and aerials (3) be replaced with waveguides (19) and associated resonance chamber apertures (20) to provide for the same effect of the cables (2) and aerials (3) in generating a  $EM_X^{DIR}(\theta_\Phi)$  field.
- [00026] In the illustrated embodiment of FIGURES 2-6, the RF power source (1) is located arbitrarily external to the chamber, and maybe attached to the external part of the chamber via a utility bulkhead (8).
- [00027] In the illustrated embodiment of FIGURES 2-6, the RF power source (1) is typically a high frequency RF power source, such as a microwave source.
- [00028] In the illustrated embodiment of FIGURES 2-6, the power source (1) is powered by electricity, although other forms of power can be used such as atomic isotope radiation.
- [00029] In the illustrated embodiment of FIGURES 2-5, the power source (1) preferably generates a high energy RF field that is fed into the aerials (3) via identical length and calibre cables (2) for the purpose of providing identical RF fields to the aerials (3).
- [00030] In the illustrated embodiment of FIGURE 6, each waveguide (19) would connect the RF field source (1) to the Xemdir field generator chamber (4)(5)(6)(7) via an aperture (20) in the height wall (6) of the Xemdir field generator chamber (4)(5)(6)(7), thus replacing

the cables (2) and aerials (3), provided the waveguides (19) are able to create the same *EM* field effect introduced into the Xemdir field generator chamber (4)(5)(6)(7) as the cables (2) and aerials (3) together have been specified to achieve in generating the  $EM_X^{DIR}(\theta_\phi)$  field.

- [00031] In the illustrated embodiment of FIGURES 2-5, the identical length cables (2) are connected to the aerials (3) located within the chamber (4)(5)(6)(7).
- [00032] In the illustrated embodiment of FIGURES 2-5, the identical aerials (3) are electrically connected to the RF power supply (1) with identical cables (2), namely identical in length and calibre.
- [00033] In the illustrated embodiment of FIGURES 2-5, the identical aerials (3) are positioned within the chamber through the same side chamber height wall (6).
- [00034] In the illustrated embodiment of FIGURES 2-5, the identical aerials (3) are positioned equidistant from the centre of the chamber through the same side chamber height wall (6).
- [00035] In the illustrated embodiment of FIGURES 2-5, the aerials (3) are identical, as a standard straight wire, coil, or knob, positioned and thus located identically equidistant from the centre of the chamber perpendicular to the long axis of the chamber to produce identical and thence opposing *EM* fields converging at the centre of the chamber.
- [00036] In the illustrated embodiment of FIGURES 2-5, the aerials (3) are positioned identically perpendicular to the longitudinal centre axis of the chamber (4) protruding centrally through the same side chamber height wall (6).
- [00037] In the illustrated embodiment of FIGURES 2-6, the chamber (4)(5)(6)(7) is an enclosed electromagnetically resonant device or structure, typically in the form of a rectangular cylinder, although the chamber may be also open at either end (7).
- [00038] In the illustrated embodiment of FIGURES 2-6, the chamber is a rectangular cylinder with length (4), width (5) and height (6) scaling properties according to the wavelength of the RF field, with either open or closed ends (7).
- [00039] In the illustrated embodiment of FIGURES 2-6, the chamber is scaled and configured to produce and contain a particularly scaled *EM* destructive interference resonance (Xemdir) field according to the prior art mathematical theory [0006].
- [00040] In the illustrated embodiment of FIGURES 2-6, the scale of the closed chamber as a length (4) is an integer multiple of an RF wavelength plus  $\frac{1}{2}$  the wavelength (an out of phase length) of the *EM* radiation as the RF field configured to be inputted to the chamber via the aerials (3) or waveguides (19).
- [00041] In the illustrated embodiment of FIGURES 2-6, the chamber (4) length must allow the aerials (3) not to touch one another inside the resonance chamber.
- [00042] In the illustrated embodiment of FIGURES 2-5, each aerial (3) has separation from each other of  $\frac{1}{2}$  a wavelength of the RF radiation that is configured to be input to the chamber via the aerials.

- [00043] In the illustrated embodiment of FIGURES 2-5, each aerial may also be separated from each other by any multiple of the RF wavelength added to  $\frac{1}{2}$  a RF wavelength as according to the prior art mathematical theory of the  $EM_X^{DIR}(\theta_\phi)$  field as per [0006].
- [00044] In the illustrated embodiment of FIGURES 2-5, with a closed chamber apparatus, the distance between an aerial (3) and their respective closed end of the chamber (7) is any factor of the RF wavelength value to allow for an even RF resonance at the chamber ends.
- [00045] In the illustrated embodiment of FIGURES 2-5, in the case of an open chamber, the distance between an aerial and their respective open end of the chamber can be any value as the resonance at the ends of an open chamber is no longer an issue.
- [00046] In the illustrated embodiment of FIGURES 2-5, the length of a closed chamber therefore would at a minimum represent one RF wavelength value for the distance between each aerial (3) and their respective closed chamber end (7) plus the minimum separation distance between the aerials as  $\frac{1}{2}$  a RF wavelength, and thus a  $2 \frac{1}{2}$  RF wavelength value.
- [00047] In the illustrated embodiment of FIGURES 2-6 the width of the chamber (5) is half the RF wavelength value as according to the prior art mathematical theory [0006].
- [00048] In the illustrated embodiment of FIGURES 2-6, the height of the chamber (6) is half the RF wavelength value factored by  $\frac{4.5833}{\pi}$  as according to the prior art mathematical theory [0006].
- [00049] In the illustrated embodiment of FIGURES 2-6, in alternative embodiments, the chamber (4) can be in the form of an ellipsoid cylinder with the width [00047] and height [00048] conditions upheld, together with the length scaling conditions of [00038]-[00046] upheld.
- [00050] In the illustrated embodiment of FIGURES 2-5, the aerials are positioned into the chamber via flush apertures in the centre of the same height wall (6).
- [00051] In the illustrated embodiment of FIGURES 2-5, the length of the aerials is ideally  $\frac{1}{4}$  to  $\frac{1}{2}$  of the RF field wavelength.
- [00052] In the illustrated embodiment of FIGURES 2-6, in one example, the power source (1) generates 5.8 GHz frequency waves, which produces  $EM$  radiation input to the chamber (4)(5)(6)(7) with a wavelength of 51.68 mm; when the power source (1) can generate 5.8 GHz frequency waves, this corresponds to the closed chamber (4) having a minimum axial length (4) of  $2 \frac{1}{2}$  (as per [00046]) factored to 51.68 mm resulting in 129.2 mm, a chamber width (5) of  $\frac{1}{2}$  (as per [00047]) factored to 51.68 mm resulting in 25.84 mm, and a chamber height (6) of  $\frac{4.5833}{\pi}$  (as per [00048]) factored to  $\frac{1}{2}$  the RF wavelength resulting in a value of 37.7 mm.
- [00053] In the illustrated embodiment of FIGURES 2-6, the chamber (4)(5)(6)(7) and the power source (1) are attached via the bulkhead (8).

- [00054] In the illustrated embodiment of FIGURES 2-6, the bulkhead (8) can be of any shape and configuration. In the illustrated example, the bulkhead (8) is in the form of a block.
- [00055] In the illustrated embodiment of FIGURE 3, a magnet (9) protrudes flush into the chamber (10) centrally through either width wall (5) equidistant from each end of the chamber (7) and thus equidistant from each of the aerials (3), although varying locations maybe be used for the position of the magnet protruding flush into the chamber between the aerials in either of the width (5) or height (6) walls.
- [00056] In the illustrated embodiment of FIGURE 3, the length and diameter of a circular cylindrical magnet (9) protruding inside the chamber (10) is such that the amount of protrusion inside the chamber is kept to a minimum in being as flush as possible with the width wall (5).
- [00057] In the illustrated embodiment of FIGURE 3, the magnet (9)(10) protruding centrally into the width wall (5) is such that a magnetic field is projected into the chamber.
- [00058] In the illustrated embodiment of FIGURE 3, the magnet (9)(10) may be flush with the width wall itself (5) having no apparent physical protrusion beyond the width wall (5) into the chamber provided condition [00057] is met.
- [00059] In the illustrated embodiment of FIGURE 3, the magnet (9)(10) ideally points at a right-angle as a north-south or south-north axis flush into the chamber as compared to the axis of the chamber length (4) although varying angles may be used for the north-south axis of the magnet protruding flush into the chamber in reference to the chamber longitudinal axis.
- [00060] In the illustrated embodiment of FIGURE 3, the magnet (9)(10) is set into the chamber via a bored flush aperture in the chamber width wall (5) midway between either end of the chamber (7) and thus midway between the identical aerials (3).
- [00061] In the illustrated embodiment of FIGURE 3, on activation of the RF field, the magnet (9)(10) is repelled by the  $EM_X^{DIR}(\theta_\phi)$  field thereby generating a particular zone of thrust (11) for the entire bulkhead (8) attached to the chamber.
- [00062] In the illustrated embodiment of FIGURE 3, the greater the magnetic field effect of the magnet (9)(10) and the greater the RF field wattage (1), the greater the repulsive thrust effect (11) by the  $EM_X^{DIR}(\theta_\phi)$  field.
- [00063] In the illustrated embodiment of FIGURE 3, to summarise the magnetic thrust operation of the Xemdir field generator, the power source (1) is activated and generates a high energy RF field that is fed via identical cables (2) to the chamber aerials (3). The chamber (4)(5)(6)(7) holds a destructive interference resonance of the  $EM$  field therein, thus generating a  $EM_X^{DIR}(\theta_\phi)$  field. The zero-point inertial  $EM_X^{DIR}(\theta_\phi)$  field repels the magnetic field located within the chamber midway between the aerials and thence repels the associated magnetic field source (9)(10). As the  $EM_X^{DIR}(\theta_\phi)$  field is zero-point inertial, the thrust (11) acts in the direction of the expelled magnetic field away from the  $EM_X^{DIR}(\theta_\phi)$  field. That is, the thrust is perpendicular to the axis of the chamber length (4) in the polar axis of the magnetic field away from (11) the  $EM_X^{DIR}(\theta_\phi)$  field

within the centre of the chamber. Thereby, the thrust (11) is applied to the bulkhead (8). In this way, the Xemdir field generator functions as a propulsion mechanism.

- [00064] In the illustrated embodiment of FIGURE 3, in one application of the Xemdir field generator, the bulkhead (8) is attached to a gimbal provided in a greater bulkhead structure. The greater bulkhead structure can be a vehicle or craft. With this arrangement, the Xemdir field generator provides directional thrust for the vehicle or craft.
- [00065] In the illustrated embodiment of FIGURE 4, an electrode (12) protrudes flush into the chamber centrally through either width wall (5) equidistant from each end of the chamber (7) and thus equidistant from each of the aerals (3), although varying locations maybe be used for the position of the electrode protruding flush into the chamber between the aerals in either of the width (5) or height (6) walls.
- [00066] In the illustrated embodiment of FIGURE 4, the length of the electrode (12) protruding inside the chamber through the width wall (5) is such that the amount of protrusion inside the chamber reaches at a maximum  $\frac{1}{2}$  the length of the chamber wall height (6) if protruding through the height wall, or  $\frac{1}{2}$  the length of the chamber wall width (5) if protruding through the width wall.
- [00067] In the illustrated embodiment of FIGURE 4, the electrode (12) protruding centrally into the width wall (5) is such that an electric charge field from the electrode is projected into the centre of the chamber without discharging to the chamber width, height, and length walls.
- [00068] In the illustrated embodiment of FIGURE 4, the electrode (12) is ideally inserted flush into the width wall itself (5) ensuring condition [00067] is met.
- [00069] In the illustrated embodiment of FIGURE 4, the electrode (12) ideally points at a right-angle to the axis of the chamber length (4) although varying angles may be used in reference to the chamber longitudinal axis.
- [00070] In the illustrated embodiment of FIGURE 4, the electrode (12) is set into the chamber via a bored flush aperture in the chamber width wall (5) midway between either end of the chamber (7).
- [00071] In the illustrated embodiment of FIGURE 4, the electrode (12) is connected via a conducting wire (13) to an electric charge generator (14) such as a Van de Graff generator.
- [00072] In the illustrated embodiment of FIGURE 4, on activation of the RF field generator (1) and charge generator (14), the electrode (12) is repelled by the  $EM_X^{DIR}(\theta_\Phi)$  field thereby generating a particular zone of thrust (15) for the entire bulkhead (8) attached to the chamber (4)(5)(6)(7).
- [00073] In the illustrated embodiment of FIGURE 4, the greater the  $EM$  charge field effect of the electrode (12) and the greater the RF field wattage (1), the greater the repulsive thrust effect (15) by the  $EM_X^{DIR}(\theta_\Phi)$  field.

- [00074] In the illustrated embodiment of FIGURE 4, to summarise the operation of the charge thrust feature of the Xemdir field generator, the power source (1) is activated and generates a high energy RF field that is fed via identical cables (2) to the chamber aerials (3). The chamber (4)(5)(6)(7) holds a destructive interference resonance of the  $EM$  field therein, thus generating a  $EM_X^{DIR}$  field. The zero-point inertial  $EM_X^{DIR}(\theta_\phi)$  field repels the electric field located within the chamber midway between the aerials and thence repels the associated electric field source (12). As the  $EM_X^{DIR}(\theta_\phi)$  field is zero-point inertial, the thrust acts in the direction of the expelled electric field away from the  $EM_X^{DIR}(\theta_\phi)$  field (15). That is, the thrust is perpendicular to the axis of the chamber length (4) in the polar axis of the magnetic field away from (15) the  $EM_X^{DIR}(\theta_\phi)$  field within the centre of the chamber. Thereby, the thrust (15) is applied to the bulkhead (8). In this way, the Xemdir field generator functions as a propulsion mechanism.
- [00075] In the illustrated embodiment of FIGURE 4, in one application of the Xemdir field generator, the bulkhead (8) is attached to a gimbal provided in a greater bulkhead structure. The greater bulkhead structure can be a vehicle or craft. With this arrangement, the Xemdir field generator provides directional thrust for the vehicle or craft.
- [00076] In the illustrated embodiment of FIGURE 5, a reagent container (16) holding solid, liquid, or gas reagent medium can be of any shape or contoured to within the chamber without disrupting the integrity of the aerials, their location, or the chamber dimensions, shown in FIGURE 5 as of a box shape in the central region of the chamber.
- [00077] In the illustrated embodiment of FIGURE 5, the reagent container (16) can be of any size or location within the resonance chamber specific to its intended purpose, namely its intended proximity to the generated  $EM_X^{DIR}(\theta_\phi)$  field.
- [00078] In the illustrated embodiment of FIGURE 5, the reagent container (16) is designed to allow the influence of the  $EM_X^{DIR}(\theta_\phi)$  field to affect the contents, and therefore being  $EM$  translucent to allow for the generation of the  $EM_X^{DIR}(\theta_\phi)$  field.
- [00079] In the illustrated embodiment of FIGURE 5, the reagent container (16) can itself be the walls of the resonance chamber, in that the resonance chamber itself can hold a reagent medium provided such does not interrupt the normal production of the  $EM_X^{DIR}(\theta_\phi)$  field.
- [00080] In the illustrated embodiment of FIGURE 5, the reagent medium container (16) can be connected to other structures as feed-in (17) and feed-out (18) portals for the medium of the reagent container (16).
- [00081] In the illustrated embodiment of FIGURE 5, in one application of the Xemdir field generator, on activation of the power source (1) is activated and generates a high energy RF field that is fed via identical cables (2) to the chamber aerials (3). The chamber (4)(5)(6)(7) holds a destructive interference resonance of the  $EM$  field therein, thus generating a  $EM_X^{DIR}(\theta_\phi)$  field, thence creating an effect on the medium of the

medium container (16) either exposed directly to or being in the vicinity of the  $EM_X^{DIR}$  ( $\theta_\phi$ ) field, leading to atomic and chemical reaction processes to occur with the medium, as by reagents supplied to within the reagent container via one porthole (17) of the reagent chamber (16) and then chemical reaction results supplied out of the reagent container by another porthole (18) of the reagent chamber (16).

[00082] In the illustrated embodiment of FIGURES 2-5, the identical length cables (2) connecting the RF power source (1) to the aerials (3) can each be replaced with a waveguide (19) as per the illustrated embodiment of FIGURE 6.

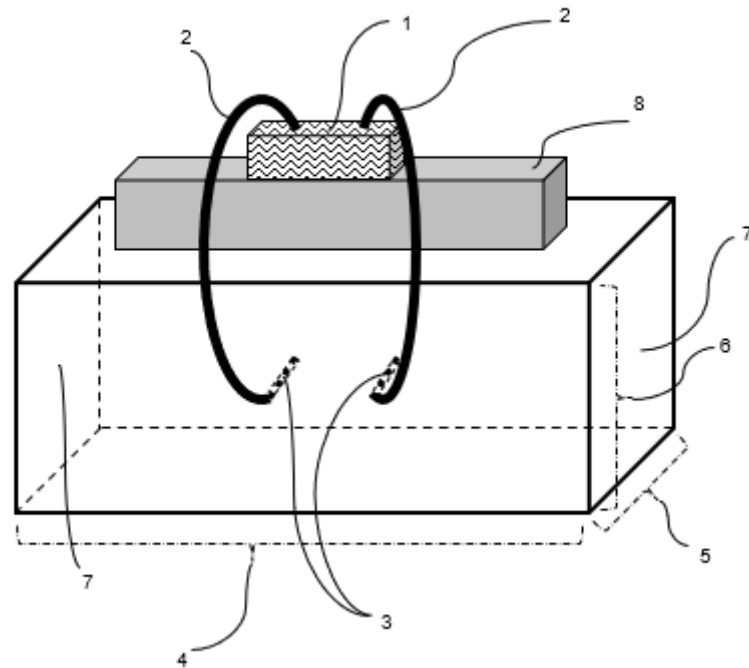
[00083] While the foregoing written description of exemplary and preferred embodiments enables one of ordinary skill in the art to make and use the present Xemdir field generator apparatus, those of ordinary skill will understand and appreciate the existence of variations, combinations and equivalents of the specific embodiments, systems, methods, and examples herein resulting in the same proposed  $EM_X^{DIR}$  ( $\theta_\phi$ ) field effect. Accordingly, the present Xemdir field generator apparatus should not be limited by the described embodiments, systems, methods, and examples herein.

[00084] An example of [00083] includes variations of the aerial placements (3) of FIGURE 2 such that the aerials (3) may not be in parallel in the same resonance chamber height wall (6) yet located parallel in opposing walls, while accommodating for such by then adjusting the RF field input for each of the cables (3) or the cable lengths (3) to result in the same intended  $EM_X^{DIR}$  ( $\theta_\phi$ ) field generation effect according to the prior art theory requirement [0006].

[00085] An example of [00083] includes variations of the location of the waveguide (19) input apertures (20) of FIGURE 6 such that the waveguides (19) may not be in parallel in the same resonance chamber height wall (6) yet located parallel in opposing walls, while accommodating for such by adjusting the RF field input for each of the waveguides to result in the same intended  $EM_X^{DIR}$  field generation effect according to the prior art theory requirement [0006].

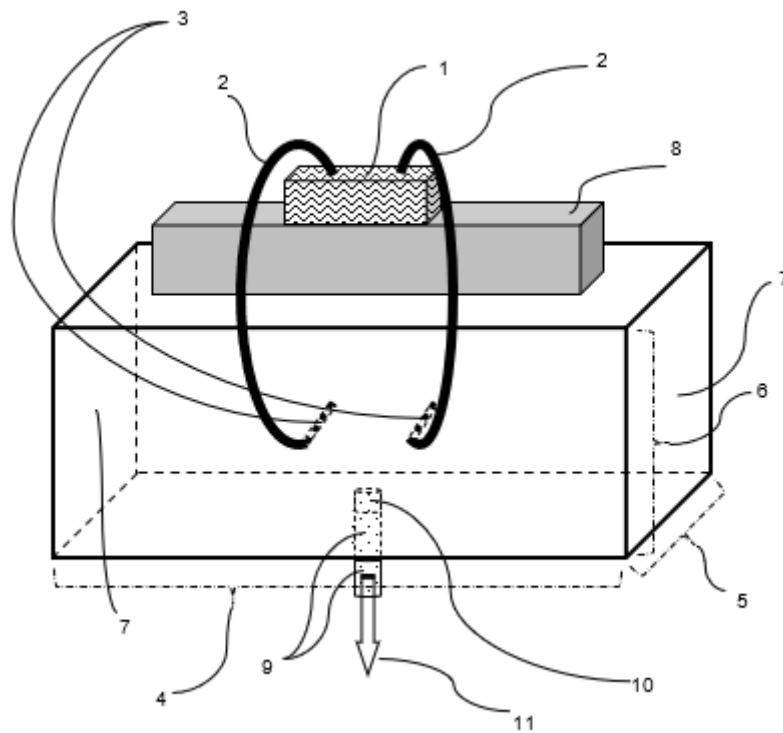


Figure 2



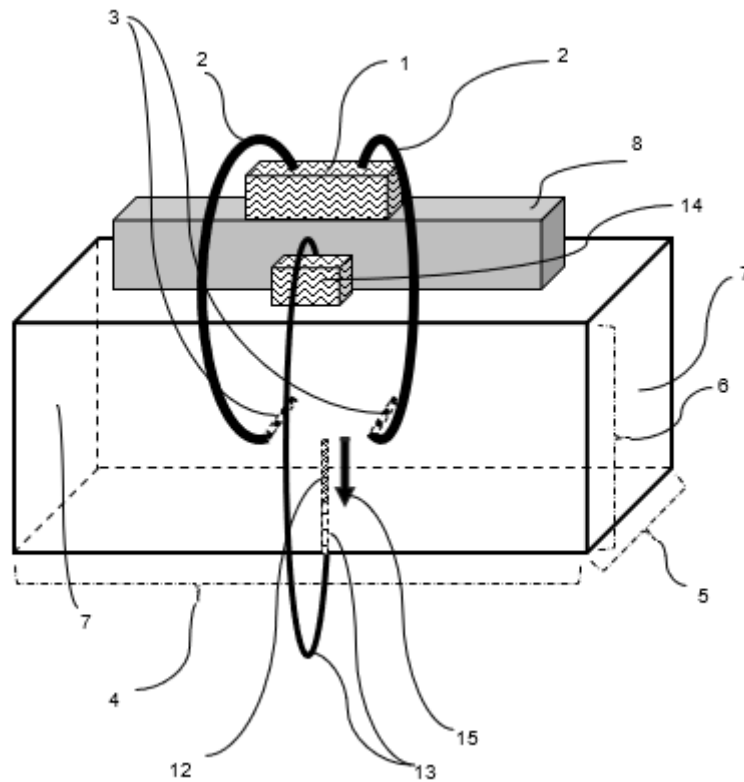
**Figure 2** shows an exemplary Xemdir ( $EM_X^{DIR}$ , baseline  $EM$  destructive interference resonance) field generator that is proposed to produce a  $EM_X^{DIR}$  field in a resonance chamber which is scaled according to the  $EM_X^{DIR}$  field theory. Identical aerials are positioned centrally in the chamber producing electromagnetic fields opposing each other. A radio frequency (RF) power source generates a high energy RF field that is fed in phase to the aerials, each RF field for each aerial being in phase with the other. The resonance chamber (4)(5)(6)(7) and the power source (1) are attached on a bulkhead (8).

Figure 3



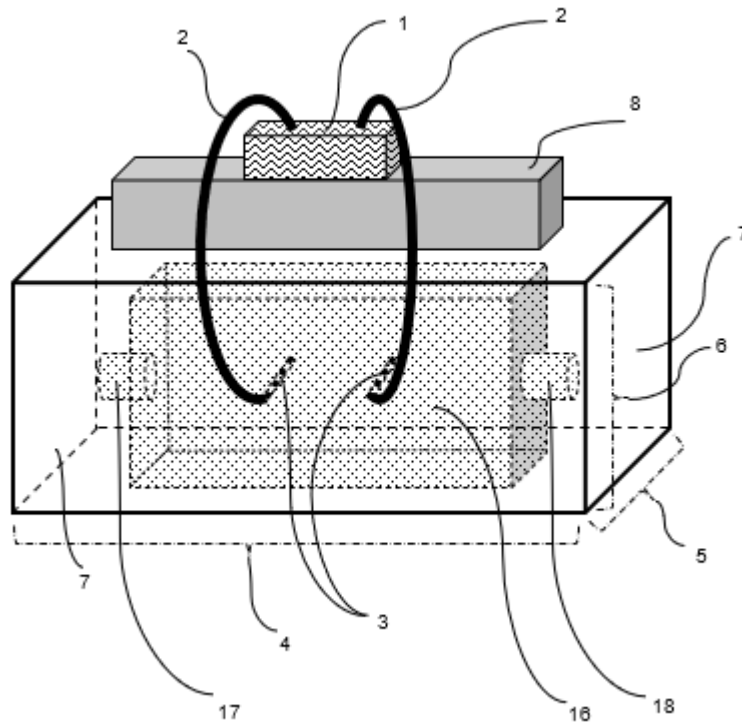
**Figure 3** shows the exemplary Xemdir ( $EM_X^{DIR}$ , baseline  $EM$  destructive interference resonance) field generator of figure 2, here with the inclusion of a magnet (9) protruding into the chamber wall (10) whereby the magnetic field protruding into the generated  $EM_X^{DIR}$  field is proposed to be repelled thence producing thrust (11) for the bulkhead (8) given that the  $EM_X^{DIR}$  field is zero-point inertial and thus 0 inertial, thence resulting in overall thrust (11) of the bulkhead.

Figure 4



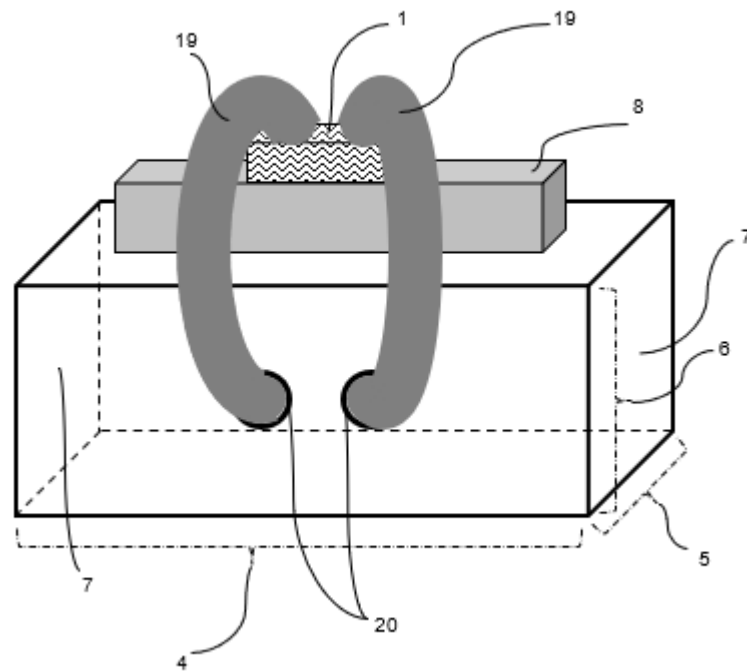
**Figure 4** shows the exemplary Xemdir ( $EM_X^{DIR}$ , baseline  $EM$  destructive interference resonance) field generator of figure 2, here with the inclusion of an electrode (12) protruding into the chamber wall whereby the electric field protruding into the generated  $EM_X^{DIR}$  field is proposed to be repelled thence producing thrust (15) for the bulkhead (8) given that the  $EM_X^{DIR}$  field is zero-point inertial and thus 0 inertial, thence resulting in overall thrust (15) of the bulkhead.

Figure 5



**Figure 5** shows the exemplary Xemdir ( $EM_X^{DIR}$ , baseline  $EM$  destructive interference resonance) field generator of figure 2, here with the inclusion of a reagent container (16) located within the Xemdir field generator chamber, a reagent container containing gaseous, liquid, or solid reagent medium wherein the  $EM_X^{DIR}(\Theta_\Phi)$  field produces an electric charge and magnetic field gradient in the region around the  $EM_X^{DIR}(\Theta_\Phi)$  field, producing a plasma for any gaseous, liquid, or solid medium which thence undergoes *ultra-catalytic* particle or chemical compound reactions, namely in using the plasma as a catalyst for those reactions. Note the reagent chamber has inlet (17) and outlet (18) portals for the incoming reagent medium and outgoing reaction product respectively.

Figure 6



**Figure 6** shows an exemplary Xemdir ( $EM_X^{DIR}$ , baseline  $EM$  destructive interference resonance) field generator that is proposed to produce a  $EM_X^{DIR}$  field in a resonance chamber which is scaled according to the  $EM_X^{DIR}$  field theory. Here the identical cables (2) and aerials (3) of figures 2-5 are replaced with waveguides (19) connecting the power source (1) with the resonance chamber (4)(5)(6)(7) entering through flush apertures (20) in the height wall (6) of the resonance chamber.

## 5. Xemdir field generator materials and proposed results

The key problematic construction issues here for the Xemdir field generator of figures 2-6 are:

- (xxi) The inputted  $EM(\theta)$  field strength wattage, which is anticipated to be, at a minimum, in the kilowatt range.
- (xxii) The requirement for two identical sinusoidal radio frequencies (RF), identical in phase and wattage approaching each other in the manner described and thus the instalment of measurement devices to confirm such.
- (xxiii) The precise tooling of the resonance chamber to match the RF specifications.
- (xxiv) The effect of the  $EM_X^{DIR}(\theta_\phi)$  field on the aerals and chamber, namely a potential destructive/reactive effect.
- (xxv) Other stability issues, namely:
  - a. the  $EM_X^{DIR}(\theta_\phi)$  field being a fundamental disruption to the inputted  $EM(\theta)$  fields.
  - b. The  $EM_X^{DIR}(\theta_\phi)$  field leading to static charge potential energy effects and thence random plasma field generation and electrical arcing in the chamber.
- (xxvi) Safety issues given the RF field strength and those proposed resultant  $EM_X^{DIR}(\theta_\phi)$  field effects, and thence the need for due containment, namely, to have such experiments executed in a contained environment with minimal human exposure to those fields.

In the case of demonstrating the **thrust feature** of the proposed experiment (figures 3-4), once constructed:

- (xxvii) The apparatus could simply be suspended by a vertical spring device attached to a vertical rail bulkhead to then measure the thrust against the magnetic or electric field upon activation of the opposing  $EM(\theta)$  fields.
- (xxviii) The proposed results are that on generation of the  $EM_X^{DIR}(\theta_\phi)$  field there would be found to be a measurable and consistent generation of propulsion against the introduced magnetic or electric field with an equal and opposite push back effect by the magnetic or electric field on the  $EM_X^{DIR}(\theta_\phi)$  field, yet given the  $EM_X^{DIR}(\theta_\phi)$  field is zero-point the direction of thrust is proposed to be in a resultant direction away from the  $EM_X^{DIR}(\theta_\phi)$  field.

A basic execution of the **thrust feature** (figures 3-4) tests could involve the following:

- (xxix)  $EM_X^{DIR}(\theta_\phi)$  field generation with magnetic (or electric) field integration located on the underside of the resonance chamber, each with the same result, as a measured movement of the chamber device down the rail bulkhead consistent with the  $EM_X^{DIR}$  field opposing the  $EM-EM^{DIR}$  magnetic (or electric) field.

- (xxx)  $EM_X^{DIR}(\theta_\phi)$  field generation with magnetic (or electric) integration located on the topside of the resonance chamber, each with the same result, as a measured movement of the chamber device up the rail bulkhead consistent with the  $EM_X^{DIR}$  field opposing the  $EM-EM^{DIR}$  magnetic (or electric) field.
- (xxxii) The  $EM_X^{DIR}(\theta_\phi)$  field generation without  $EM-EM^{DIR}$  magnetic (or electric) field integration, with no result.
- (xxxiii) A non- $EM_X^{DIR}$  test (aerials not properly scaled) with  $EM-EM^{DIR}$  magnetic (or electric) field integration, with no result.

These **thrust feature** (figures 3-4) tests and associated results are proposed to confirm:

- (xxxiv) The requirement for the  $EM_X^{DIR}(\theta_\phi)$  field condition, and thus a certain  $EM(\theta)$  scaling principle for an  $EM_X^{DIR}(\theta_\phi)$  result, for the for the RF field and chamber to generate an  $EM_X^{DIR}(\theta_\phi)$  field.
- (xxxv) The requirement for the  $EM-EM^{DIR}$  magnetic (or electric) field to effect thrust.

For the **plasma feature** (figure 5) tests, despite any potential random arcing and plasma generation being self-evident on generation of the  $EM_X^{DIR}(\theta_\phi)$  field, a most basic test could involve:

- (xxxvi) An  $EM$  translucent chamber filled with a gaseous, liquid, or solid chemical compound introduced to the Xemdir chamber in a manner not interfering with the  $EM_X^{DIR}(\theta_\phi)$  field generation.
- (xxxvii) To then test those reagents for any chemical reaction processes incurred by the effect of the  $EM_X^{DIR}(\theta_\phi)$  field and associated plasma generation.

With the **plasma feature** are proposed to figure two basic processes for solid, liquid, or gaseous reagents, namely:

- (xxxviii) The destructive effect of  $EM_X^{DIR}(\theta_\phi)$  field on the solid, liquid, or gaseous reagents.
- (xxxix) The constructive effect of the  $EM_X^{DIR}(\theta_\phi)$  field in form of potential and kinetic energy enhancements for the development of new atomic/chemical compounds.
- (xl) Such (xxxviii)-(xxxix) to represent a unique ultra-catalytic process.

Those three features are proposed to be tested by analysing the results (the resultant medium), namely that indeed a destructive phase was incurred, and yet also a constructive phase.

The **utility** of the **thrust feature** (magnetic and electric) of the Xemdir field generator is obvious, namely not requiring vast amounts of combustion fuel for propulsion. Here, the fuel required is that which is required for generating a RF field, and thus can be supplied by battery sources or a nuclear reactor. The Xemdir field generator though with its catalytic features offers new ideas for

electric and nuclear power in the form of potential atomic radioactive isotopes directly supplying a RF field generation process.

There, the **utility** of the **plasma feature** of the Xemdir field generator as its *ultra-catalytic chemical reaction effect* (both in being ultra-destructive and ultra-reconstructive) is for the formation of what has been considered as exotic and “hard to manufacture” materials, such as:

- (xi) Hydrogen gas from water.
- (xli) Exotic atoms and atomic isotopes.
- (xliii) Exotic alloys.

## 6. Xemdir field generator interpretations

The primary problematic issue of interpretation with all the results<sup>26</sup> is through the lens of quantum field theory (QFT) and general relativity (GR), namely when *EM* undergoes absolute destructive interference resonance then where does that energy go, and why that process would appear to be zero-point while also resisting *EM* (electromagnetic),  $EM^{DIR}$  (mass), and  $EM-EM^{DIR}$  (electric and magnetic) fields. There, the question for QFT and GR physics is what this zero-point energy field means to their dimensional constitution descriptions of flat and curved 4d spacetime. Simply, would this new phenomenon in fact be the zero-point gravitational field as proposed by Temporal Mechanics, or would this new phenomenon be a new fundamental zero-point energy field that has escaped the attention of QFT and GR physics that can nonetheless be incorporated into QFT and/or GR?

To answer that question is to ask what the fundamental processes in play here are proposed to be, namely:

- (xliii) The *complete* destructive interference resonance (*DIR*) of opposing in-phase *EM* ( $\theta$ ) fields.
- (xliiv) A  $EM_X^{DIR}(\theta_\phi)$  manifesting field effect that creates a potential energy gradient thence kinetically repelling  $EM-EM^{DIR}$  charge<sup>27</sup> **and** magnetism.
- (xlv) A  $EM_X^{DIR}(\theta_\phi)$  manifesting field effect that is both:
  - a. Zero-point:
    - i. Namely a repulsion effect on *EM* ( $\theta$ ) and mass ( $\theta_\phi$ ),
  - b. Zero-point inertial and thus non-inertial:
    - i. As otherwise there would be a kick-back effect on the  $EM_X^{DIR}(\theta_\phi)$  zero-point field by *EM* ( $\theta$ ) and mass, and thence by charge and magnetism.

<sup>26</sup> As the proposed electric and magnetic thrust, and plasma generation.

<sup>27</sup> Not measured here yet can be demonstrated in a most basic form as the generation of arcing in the described closed resonance chamber.



One possible description of this proposed  $EM_X^{DIR}(\theta_\phi)$  field phenomenon according to QFT and GR would most likely postulate a thus far unaccounted for field effect and associated energy link between  $EM$  and mass/gravity, one that describes this new phenomenon whereby this zero-point energy realm ( $\theta_\phi$ ) resists  $EM(\theta)$ ,  $EM^{DIR}$  (mass ad emergent gravity,  $\theta_\phi$ ), and thence  $EM-EM^{DIR}$  (static charge and magnetic fields). To propose this zero-point energy field phenomenon to be compatible with QFT and GR is to address what would happen to  $EM$  when it breaks down as per the terms described by QFT and GR. The obvious question there especially given current theoretical studies of physics into black holes and zero-point energy is, “does this proposed  $EM_X^{DIR}(\theta_\phi)$  zero-point field represent a black hole condition of a singularity, or perhaps a description for dark energy if not dark matter?”

To note is that this proposed  $EM_X^{DIR}(\theta_\phi)$  field phenomenon is not the idea of mass becoming hyper-massive and thence collapsing in on itself as is proposed as the standard/GR approach to a singularity. Here with this proposed  $EM_X^{DIR}(\theta_\phi)$  field phenomenon is the idea of  $EM$  undergoing strict destructive interference resonance that would then accentuate a zero-point energy field that is derived to repel (and not attract) both  $EM(\theta)$  and mass ( $EM^{DIR}, \theta_\phi$ ), and thence repel  $EM-EM^{DIR}$  static charge and magnetic fields. The implication of such is that the idea of dark matter is discounted given the zero-point energy field is proposed to be repulsive the  $EM(\theta)$  and mass ( $\theta_\phi$ ) fields, still nonetheless resulting in mass being self-attractive<sup>28</sup>. Such also discounts the idea of dark energy given the energy processes here are entirely accounted for and not interfering with the scales of the dimensions.

In physics nonetheless, paradoxes do exist. There, as an example, it is noted that black holes are proposed by GR to have a type of inversion of energy at their utmost base, proposed as being caused by a singularity-styled zero-point field base. There is potential discussion therefore to be had with GR theory about the possibility of this  $EM_X^{DIR}(\theta_\phi)$  field being a ground state zero-point energy field relaying such an effect, the problem there being the non-requirement for a maximum-mass (event horizon) event.

A key final issue to be considered here is the idea of “*absolute time and space*” as the zero-dimensional reference. The proposal here is that the zero-point level, specifically zero-dimensional time with zero-dimensional space, represents the absolute time and space level as the primary reference for measuring physical phenomena. Conversely, GR considers the mass-based and associated gravitational frame of reference to be the absolute reference. Yet, per the proposed Xemdir field generator experiments and those proposed results, the idea of the mass/gravity frame of reference is proposed to be shown incomplete in not accounting for the zero-dimensional basis (zero-point basis) for mass and associated emergent gravity, highlighting the inherent incompleteness of GR, together with the incompleteness of QFT as per their non-zero inertia axioms. The proposal here is that the zero-dimensional number theory bridges that gap between QFT and GR, between flat and curved spacetime respectively, such in a zero-dimensional manner, and thus in a type of zero quantum gravity manner.

---

<sup>28</sup> [51]: p5-12.

## 7. Conclusion

Proposed here have been 3 experiments to test the hypothesis of the  $EM_X^{DIR}(\theta_\phi)$  field theory. The specifications of the proposed experiments are based on the work of Temporal Mechanics<sup>29</sup>. Although this paper has focussed on describing the repulsive effects of the  $EM_X^{DIR}(\theta_\phi)$  field upon  $EM(\theta)$  and mass ( $\theta_\phi$ ), and thence charge and magnetic fields, the proposed experiments acknowledge that there are unavoidably in-built issues regarding the generation of a  $EM_X^{DIR}(\theta_\phi)$  field, namely key stability issues (xxi)-(xxvi). Further theoretic work is therefore proposed along the line of the more general and thence natural energy dynamics that are proposed to exist between the  $EM(\theta)$ ,  $EM^{DIR}(\theta_\phi)$ , and  $EM_X^{DIR}(\theta_\phi)$  *timespace* fields and how they appear in nature. Although this was discussed in paper 51 [51] regarding causality, locality, and indeterminacy, certain atomic features of energy dynamics are proposed to be explored from the microscopic scale to the macroscopic scale. Fundamentally nonetheless, here the basic question of what the Temporal Mechanic's zero-dimensional number theory can achieve that is above and beyond contemporary physics, with new proposals of proof, has been approached.

### Conflicts of Interest

The author declares no conflicts of interest; this has been an entirely self-funded independent project.

### References

1. Jarvis S. H. (2017), <https://doi.org/10.13140/rq.2.2.35132.28804/1>, [https://www.researchgate.net/publication/328738261\\_Gravity's\\_Emergence\\_from\\_Electrodynamics](https://www.researchgate.net/publication/328738261_Gravity's_Emergence_from_Electrodynamics), <https://vixra.org/abs/1704.0169>
2. Jarvis S. H. (2017), <https://doi.org/10.13140/rq.2.2.30099.12327/4>, [https://www.researchgate.net/publication/328738109\\_Golden\\_Ratio\\_Axioms\\_of\\_Time\\_and\\_Space](https://www.researchgate.net/publication/328738109_Golden_Ratio_Axioms_of_Time_and_Space), <https://vixra.org/abs/1706.0488>
3. Jarvis S. H. (2017), <https://doi.org/10.13140/rq.2.2.23388.23683/2>, [https://www.researchgate.net/publication/328738518\\_The\\_Emergence\\_of\\_Consciousness\\_from\\_Chaos](https://www.researchgate.net/publication/328738518_The_Emergence_of_Consciousness_from_Chaos), <https://vixra.org/abs/1707.0044>
4. Jarvis S. H. (2017), <https://doi.org/10.13140/rq.2.2.10045.10726/5>, [https://www.researchgate.net/publication/328738422\\_Phi-Quantum\\_Wave-Function\\_Crystal\\_Dynamics](https://www.researchgate.net/publication/328738422_Phi-Quantum_Wave-Function_Crystal_Dynamics), <https://vixra.org/abs/1707.0352>
5. Jarvis S. H. (2017), <https://doi.org/10.13140/rq.2.2.23466.88009/3>, [https://www.researchgate.net/publication/328738526\\_Time\\_as\\_Energy](https://www.researchgate.net/publication/328738526_Time_as_Energy) <https://vixra.org/abs/1711.0419>

<sup>29</sup> Specifically papers 42 [42], 47 [47], [51], and 52 [52].

6. Jarvis S. H. (2018), <https://doi.org/10.13140/rq.2.2.13400.55044/4>,  
<https://www.researchgate.net/publication/328738389> The Relativity of Time  
<https://vixra.org/abs/1801.0083>
7. Jarvis S. H. (2019), <https://doi.org/10.13140/rq.2.2.27741.26089/2>,  
<https://www.researchgate.net/publication/332672475> Golden Ratio Entropic Gravity Gravitational Singularity Field Testing, <https://vixra.org/abs/1904.0485>
8. Jarvis S. H. (2019), <https://doi.org/10.13140/rq.2.2.35399.14246/2>,  
<https://www.researchgate.net/publication/332879052> The Golden Ratio Time Algorithm,  
<https://vixra.org/abs/1905.0081>
9. Jarvis S. H. (2019), <https://doi.org/10.13140/rq.2.2.28499.02084/1>,  
<https://www.researchgate.net/publication/333668324> The Physics Chimera,  
<https://vixra.org/abs/1906.0127>
10. Jarvis S. H. (2019), <https://doi.org/10.13140/rq.2.2.10258.71363/1>,  
<https://www.researchgate.net/publication/333972239> The Conception of Time,  
<https://vixra.org/abs/1906.0441>
11. Jarvis S. H. (2019), <https://doi.org/10.13140/rq.2.2.15833.67689/1>,  
<https://www.researchgate.net/publication/335232726> Space and the Propagation of Light  
<https://vixra.org/abs/1908.0388>
12. Jarvis S. H. (2019), <https://doi.org/10.13140/rq.2.2.17320.93443>,  
<https://www.researchgate.net/publication/336130560> Space and the Nature of Gravity,  
<https://vixra.org/abs/1909.0656>
13. Jarvis S. H. (2019), <https://doi.org/10.13140/rq.2.2.14287.43683/2>,  
<https://www.researchgate.net/publication/337019159> Space and the Redshift Effect,  
<https://vixra.org/abs/1911.0064>
14. Jarvis S. H. (2019), <https://doi.org/10.13140/rq.2.2.25730.63686/2>,  
<https://www.researchgate.net/publication/338159068> Solving the Cosmological Constant Problem,  
<https://vixra.org/abs/1912.0451>
15. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.13078.91205/3>,  
<https://www.researchgate.net/publication/338548474> Hybrid Time Theory Euler's Formula and the Phi-Algorithm, <https://vixra.org/abs/2001.0233>
16. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.27053.64487/3>,  
<https://www.researchgate.net/publication/338689227> The Hybrid Time Clock as a Function of Gravity  
<https://vixra.org/abs/2001.0401>
17. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.20045.79847/2>,  
<https://www.researchgate.net/publication/340270768> Hybrid Time Theory Cosmology and Quantum Gravity I, <https://vixra.org/abs/2003.0659>
18. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.16207.84648/1>,  
<https://www.researchgate.net/publication/340574420> Scientific Principles of Space Time and Perception, <https://vixra.org/abs/2004.0260>
19. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.23972.22405/1>,  
<https://www.researchgate.net/publication/341117279> Hybrid Time Theory Cosmology and Quantum Gravity II, <https://vixra.org/abs/2005.0053>

20. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.34441.67683/6>,  
<https://www.researchgate.net/publication/341440377> Mathematical Principles of Time and Energy,  
<https://vixra.org/abs/2005.0179>
21. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.21001.88169/1>,  
<https://www.researchgate.net/publication/341782076> Dimensional Mechanics of Time and Space,  
<https://vixra.org/abs/2005.0286>
22. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.29715.71202/3>,  
<https://www.researchgate.net/publication/342343657> Dimensional Thermodynamics,  
<https://vixra.org/abs/2006.0194>
23. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.10565.68320/3>,  
<https://www.researchgate.net/publication/343281767> Time-Space Wave-Mechanics,  
<https://vixra.org/abs/2007.0223>
24. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.15362.09929/3>,  
<https://www.researchgate.net/publication/343678982> Temporal Calculus The Calculus of Time-Points in Space, <https://vixra.org/abs/2008.0111>
25. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.33774.43843/3>,  
<https://www.researchgate.net/publication/343987838> Temporal Calculus solving the Yang-Mills Existence and Mass Gap problem, <https://vixra.org/abs/2008.0226>
26. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.28539.75043/2>,  
<https://www.researchgate.net/publication/344221574> Temporal Calculus Time Scaling Space,  
<https://vixra.org/abs/2009.0091>
27. Jarvis S. H. (2020),  
<https://doi.org/10.13140/rq.2.2.20191.07844><https://www.researchgate.net/publication/344387016> Temporal Calculus Resolving Elementary Particle Formation and Confinement,  
<https://vixra.org/abs/2009.0177>
28. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.12474.21447/2>,  
<https://www.researchgate.net/publication/344457690> Temporal Calculus Resolving Einstein's Theory of Relativity Special and General, <https://vixra.org/abs/2010.0017>
29. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.12651.98086/1>,  
<https://www.researchgate.net/publication/345127477> Time and Non-Locality Resolving Bell's Theorem,  
<https://vixra.org/abs/2011.0002>
30. Jarvis S. H. (2020), <https://doi.org/10.13140/rq.2.2.11032.83206/4>,  
<https://www.researchgate.net/publication/346672010> Non-Local Time-Point Theory Magnetic Quantum Shell MQS Modelling, <https://vixra.org/abs/2012.0040>
31. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.28879.10407/1>,  
<https://www.researchgate.net/publication/348184426> Temporal Mechanics A Time-Space Circuits,  
<https://vixra.org/abs/2101.0022>
32. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.31751.21925/5>,  
<https://www.researchgate.net/publication/348729069> Temporal Mechanics B Time-Space Constants,  
<https://vixra.org/abs/2101.0148>
33. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.30214.70720/5>,  
<https://www.researchgate.net/publication/349108810> Temporal Mechanics C Time-Space Manifolds,  
<https://vixra.org/abs/2102.0047>

34. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.17868.54403/5>,  
<https://www.researchgate.net/publication/350090036> Temporal Mechanics D Time-Space Metrics,  
<https://vixra.org/abs/2103.0102>
35. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.28496.84483/7>,  
<https://www.researchgate.net/publication/350512305> Temporal Mechanics E Time-Space Logistics,  
<https://vixra.org/abs/2103.0201>
36. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.34363.34082/5>,  
<https://www.researchgate.net/publication/353224312> Quantum Gravity and the calculation of maximum SOL mass, <https://vixra.org/abs/2107.0086>
37. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.20022.42563/5>,  
<https://www.researchgate.net/publication/353403592> An Axiom of Time resolving Entropy CP violation and the isotropic CMBR, <https://vixra.org/abs/2107.0146>
38. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.28179.20007/6>,  
<https://www.researchgate.net/publication/354794575> Temporal Mechanics and EM-DIR particle pair production, <https://vixra.org/abs/2109.0167>
39. Jarvis S. H. (2021), <https://doi.org/10.13140/rq.2.2.15658.13764/4>,  
<https://www.researchgate.net/publication/356039421> Temporal Mechanics and the derivation of an electron degeneracy neutrino Gravity constant G fine structure constant a Planck constant h and the phenomenal values of Sol, <https://vixra.org/abs/2111.0045>
40. Jarvis S. H. (2021), <http://dx.doi.org/10.13140/RG.2.2.19674.67529/6>,  
<https://www.researchgate.net/publication/356508902> Time-domains as the foundation for classical mechanics the relativity of moving objects and the known field forces presenting the case for a unified field theory, <https://vixra.org/abs/2111.0131>
41. Jarvis S. H. (2022), [10.13140/RG.2.2.17398.93763/6](https://doi.org/10.13140/RG.2.2.17398.93763/6),  
<https://www.researchgate.net/publication/357690054> A time equation thought experiment deriving 3D space as timespace in forming the basis for particle and field phenomena, <https://vixra.org/abs/2201.0043>
42. Jarvis S. H. (2022), [10.13140/RG.2.2.23272.75521/5](https://doi.org/10.13140/RG.2.2.23272.75521/5),  
<https://www.researchgate.net/publication/358974090> The Temporal Mechanics XEMDIR field resolving zero-point energy negative energy anti-EM anti-gravity symmetry breaking and Baryon asymmetry, <https://vixra.org/abs/2203.0018>
43. Jarvis S. H. (2022), <https://doi.org/10.13140/rq.2.2.23915.00808/4>,  
<https://www.researchgate.net/publication/359052099> The mathematics of zero-dimensional space, <https://vixra.org/abs/2203.0030>
44. Jarvis S. H. (2022), <https://doi.org/10.13140/rq.2.2.33528.32000/6>,  
<https://www.researchgate.net/publication/359577367> A mathematical analysis of zero-dimensionality in deriving the natural numbers offering a solution to Goldbach's conjecture and the Riemann hypothesis, <https://vixra.org/abs/2203.0181>
45. Jarvis S. H. (2022), <http://dx.doi.org/10.13140/RG.2.2.24087.85921/3>,  
<https://www.researchgate.net/publication/360065326> A foundational zero-dimensional scaling system mandating the principle of relativity and the associated constancy of the speed of light in a vacuum, <https://vixra.org/abs/2204.0127>
46. Jarvis S. H. (2022), <http://dx.doi.org/10.13140/RG.2.2.11064.21768/2>,  
<https://www.researchgate.net/publication/360270193> The flaw of applying mathematics directly to phy

- sical phenomena in addressing the Entscheidungsproblem and Godel's theorems as compared to the mathematics of zero-dimensionality, <https://vixra.org/abs/2204.0177>
47. Jarvis S. H. (2022), [10.13140/RG.2.2.23165.44001/3](https://www.researchgate.net/publication/360588347), <https://www.researchgate.net/publication/360588347> Zero-dimensional mathematics and the associated timespace Xemdir field geodesic in deriving Fermat's principle the stationary-action principle and the principle of inertia, <https://vixra.org/abs/2205.0079>
48. Jarvis S. H. (2022), [10.13140/RG.2.2.29238.57929/5](https://www.researchgate.net/publication/361556863), <https://www.researchgate.net/publication/361556863> Zero-dimensional philosophy, <https://vixra.org/abs/2207.0135>.
49. Jarvis S. H. (2022), <https://www.researchgate.net/publication/361864787> Zero-dimensional number theory, [10.13140/RG.2.2.22499.84008/4](https://www.researchgate.net/publication/361864787).
50. Jarvis S. H. (2022), [10.13140/RG.2.2.14200.52480/1](https://www.researchgate.net/publication/363474597), <https://www.researchgate.net/publication/363474597> The zero-dimensional physical theory I solving reality's puzzle, <https://vixra.org/abs/2209.0125>.
51. Jarvis S. H. (2022), [0.13140/RG.2.2.16815.41127/2](https://www.researchgate.net/publication/363799929), <https://www.researchgate.net/publication/363799929> The zero-dimensional physical theory II causality locality and indeterminacy, <https://vixra.org/abs/2209.0150>.
52. Jarvis S. H. (2022), [0.13140/RG.2.2.11854.95049](https://www.researchgate.net/publication/364223266), <https://www.researchgate.net/publication/364223266> The zero-dimensional physical theory III graphing time and space <https://vixra.org/abs/2210.0031>.