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Plasma & Astrotheology

Approximate Analytic Solution

Highlights

Slip Plane in the Ether V

Dimensional Continuum for Universe

Discovering Thoughts, Inventing Future

VOLUME 20 ISSUE 6 VERSION 1.0

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By B. N. Prasad
Kolhan University

Abstract- Self-similar motion for the flow between a piston and strong shock propagating in a non uniform ideal gas at rest has been studied. The solution to the problem is similar to that of hypersonic flows past the power law bodies. The gas ahead of the shock is assumed to be uniform and at rest. This is considered as a particular case of radiative piston problem. The shock is assumed to be very strong and propagating in a medium at rest in which density obeys power laws. This problem with spherical symmetry has got importance in astrophysics. To solve the gas dynamics problem, Chernyii's expansion techniques have been used in which flow variables are expanded in a series of powers of ε, the density ratio across the strong shock. The approximate analytic solution has been obtained in closed form to the zeroth approximation. The problem discussed belongs to the self-similar motion of the first kind. The resulting analytic solution gives the flow variables distribution for plane, cylindrical, and spherical symmetry for different cases which satisfy the similarity conditions with accurate trend and values.

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I. Introduction

The propagation of a blast wave in an inhomogeneous medium, with ambient density given by $\rho_o \, \alpha x^{-\alpha}$, where x is the distance from the center of explosion and α is a positive number, has been analytically studied by Sedov[1] and Rogers[2]. The energy of the explosion does not vary with time, and the problem is self-similar. The uniform expansion of a piston in a homogeneous medium, taking into account the counterpressure across the shock, was numerically solved by Taylor[3]. Bhatnagar and Lal[4] have also considered explosion problem for finite shock strength in a non-homogeneous medium, both when the self-gravitation of the gas is important, and when it is negligible. The motion produced by a piston moving according to the general law $R = C\,t^{n+1}$, where $n>-1$, for strong shocks, has been considered by Kochina and Melnikov[5] and Rogers[6], besides others, by solving numerically the ordinary differential equations obtained through similarity transformations. Wang[7]has obtained an approximate solution of a plane radiative piston. Sachdev and Ashraf[8]have considered the problems of plane, spherical, and, cylindrical pistons moving in an inhomogeneous medium and have obtained solutions in terms of Incomplete Beta functions. The problem of Sedov[1] and Taylor[3] was extended by Krashaninikova[9] to the case when the piston expands non-uniformly with a velocity U is given by

$$U = U_o t^n, \; (n > -1)\ldots \qquad \ldots\ldots. \; (1.1)$$

where U_o is a constant.

In this paper, self-similar solutions for the flow between a piston and the strong shock propagating non-uniformly in an ideal gas at rest obeying the power-law density distribution are investigated. Ranga Rao and Purohit[10] have studied this problem numerically. The solutions of this problem are similar to that of the solutions of hypersonic flow past the power-law bodies obtained by Lees and Kubota[11]. They have shown that the condition for the existence of the solution is- $\frac{\nu}{\nu+2} < n \leq 0$,
where $\nu = 1, 2, 3$ for plane, cylindrical and spherical flows respectively. In all these works, the gas ahead of the shock is assumed to be uniform and at rest. Helliwell[12] studied the piston problem, in which the piston velocity is assumed to be of the form (1.1) and the density of gas ahead of the shock satisfies the law

$$\rho_o = A r^{-w} \; (w > 0) \; \ldots\ldots\ldots\ldots\ldots.. \; (1.2)$$

where A is a constant.

This problem has been considered as a particular case of a radiative piston problem in which there exists, by dimensional considerations, a relation between n and w, namely
$n = -w/w+5$.

In this paper, we consider the self-similar piston problem in which the piston velocity obeys the law (1.1). The shock is assumed to be strong and propagating in a medium at rest in which the density obeys equation (1.2). The problem with spherical symmetry has got importance in astrophysics, Parker[13]. We first observe that there are only independent dimensional constants U_o and A involved in the problem, and hence self-similarity exists. Also, there cannot be, in general, any explicit relation between n and w as given by Helliwell[12].

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On the other hand, it is shown that for all physically meaningful flows the ranges for n and w are

$$\frac{-(\nu-w)}{\nu+2-w} < n < \frac{-w(\gamma-1)}{[w(\gamma-1)+2]} \quad \text{and} \quad 0<w<\frac{\nu}{\gamma} \qquad (1.3)$$

where γ is the ratio of specific heats. These conditions on n ensure the finiteness of density and pressure drag on the piston surface. Also, it is shown that when $n = \frac{w(\gamma-1)}{[w(\gamma-1)+2]}$, the flow becomes homentropic. The problem with $\gamma = \frac{7}{5}$, n = -w/w+5 considered by Helliwell[12] corresponds to homentropic flow. Numerical solutions for $\nu = 3$, $\gamma = \frac{7}{5}$, and w = 1.5are given using the Adam Moulton method.

Chernyii[14] has given an expansion technique to solve the gas-dynamics problem. The expansion parameter $\varepsilon = \frac{\gamma-1}{\gamma+1}$, which occurs in the shock boundary conditions where γ is the density ratio across a strong shock. For gases when γ generally varies between 1 and 5/3, this parameter is sufficiently small. He has considered the motion of a piston and the big explosion problem in a uniform medium, restricting mostly to zeroth-order solution. In an earlier paper, Chernyii[15] has given a particular solution of the piston problem in a homogeneous medium in an integral form to first order in ε. Wang[7] has also obtained an approximate analytic solution of a plane radiating piston, using Chernyii's[15] technique. In this paper, we have employed Chernyii's[15] technique, in which flow variables are expanded in power series in ε and have obtained approximate analytic solutions in closed form to the zeroth approximation. This problem belongs to the class of self-similar motion of the first kind in which the similarity exponent occurring in the law of shock propagation can be determined in advance from physical considerations.

II. Basic Equations

The partial differential equations of motion, continuity and energy for one-dimensional unsteady flow of a perfect gas are transformed into a set of ordinary differential equations,

$$\lambda(v-\delta)v' + \frac{P'}{R} + v(v-1) - (w-2)\frac{P}{R} = 0 \qquad (2.1)$$

$$\lambda[v' + (v-\delta)\frac{R'}{R}] + (v-w)v = 0 \qquad (2.2)$$

$$\lambda(v-\delta)[\frac{P'}{P}\gamma\frac{R'}{R}] - 2 + [w(\gamma-1)+2]\,v = 0 \qquad (2.3)$$

by the following transformations

$$v = \frac{r}{t} V(\lambda), \quad R = \frac{A}{r^w} R(\lambda), \quad p = \frac{A}{r^{w-2}t^2} P(\lambda) \quad . (2.4)$$

$$\lambda = (\frac{\delta\bar{\lambda}}{U_0})\, r\, t^{-\delta}, \quad \delta = 1 + n \qquad (2.5)$$

The similarity variable λ is took in the form (2.5) by considering U_o and A as the basic dimensional constants involved in the problem and, it takes values $\bar{\lambda}$ and 1 at the piston surface and behind the shock respectively. V, R, and P are non-dimensional reduced particle velocity, density and, pressure, respectively. The boundary conditions for the strong shock are

$$V(1) = \frac{2\delta}{\gamma+1}, \quad R(1) = \frac{\gamma+1}{\gamma-1}, \quad P(1) = \frac{2\delta^2}{\gamma+1} \qquad (2.6)$$

and the kinematic condition on the piston gives

$$v(\bar{\lambda}) = \delta \qquad (2.7)$$

For the existence of solutions in the self-similar form, certain similarity conditions are to be satisfied. The total energy of the flow between the piston surface and the shock front, using (2.4) and (2.5), can be written as

$$E = AK_\nu\left(\frac{U_0}{\delta\bar{\lambda}}\right)^{\nu+2-w_t}.\delta(\nu+2-w) - 2\int_{\bar{\lambda}}^{1}\left(\frac{1}{2}RV^2 + \frac{P}{\gamma-1}\right)\lambda^{\nu+1-w}d\lambda \quad (2.8)$$

where $$K_\nu = 2^{\nu-1}\pi^{\frac{(\nu-1)(4-\nu)}{2}}. \qquad (2.9)$$

For the flows driven out by the piston, the energy always increases with time. This is possible only if

$$n > -(\frac{\nu-w}{\nu+2-w}), \; w < \nu \ldots\ldots \quad \ldots.. \quad (2.10)$$

The second condition of (2.5) is required to make sure that for all physically meaningful solutions, δ lies between zero and one. These conditions ensure that the pressure drag on the piston is finite. Further, it is necessary that $\frac{dv}{d\lambda} < 0$ in the domain of interest. Thus, it follows that the density at the piston surface is finite if

$$\frac{2}{\nu\gamma+2-w} < \delta \leq \frac{2}{w(\gamma-1)+2}\ldots\ldots\ldots. \qquad (2.11)$$

For all gases (with $\gamma > 1$) the ranges for n and w can be obtained from (2.10) and (2.11) as

$$-\frac{(\nu-w)}{\nu+2-w} < n \leq -\frac{w(\gamma-1)}{w(\gamma-1)+2}, \quad 0 < w < \frac{\nu}{\gamma}\ldots\ldots \qquad (2.12)$$

These are the conditions on n and w for the existence of physically meaningful solutions.

Following Chernyii's[15] technique, we expand reduced flow variables as

$$V = V^{(0)} + \varepsilon V^{(1)} + \varepsilon^2 V^{(2)} + \cdots \quad . \qquad (2.13)$$

$$R = \frac{R^{(0)}}{\varepsilon} + R^{(1)} + \varepsilon R^{(2)} + \cdots\ldots\ldots \qquad (2.14)$$

$$P = P^{(0)} + \varepsilon P^{(1)} + \varepsilon^2 P^{(2)} + \ldots\ldots.. \qquad (2.15)$$

We substitute expansions (2.13) to (2.15) into equations (2.1) to (2.3) and obtain the following set of differential equations for the zeroth approximation—

$$\lambda[R^{(0)}V^{(0)}\frac{dV^{(0)}}{d\lambda} - \delta R^{(0)}\frac{dV^{(0)}}{d\lambda}] + R^{(0)}V^{2(0)} - R^{(0)}V^{(0)} = 0\ldots \; (2.16)$$

$$\lambda\left[R^{(0)}\frac{dV^{(0)}}{d\lambda} + V^{(0)}\frac{dR^{(0)}}{d\lambda} - \delta\frac{dR^{(0)}}{d\lambda}\right] + (\nu-w)R^{(0)}V^{(0)} = 0\ldots. \; (2.17)$$

$$\lambda V^{(0)}\left[R^{(0)}\frac{dP^{(0)}}{d\lambda} - \gamma P^{(0)}\frac{dR^{(0)}}{d\lambda}\right] - \delta\lambda\left[R^{(0)}\frac{dP^{(0)}}{d\lambda} - \gamma P^{(0)}\frac{dR^{(0)}}{d\lambda}\right]$$

$$-2P^{(0)}R^{(0)}+[w(\gamma-1)+2]R^{(0)}V^{(0)}P^{(0)} = 0\ldots \quad (2.18)$$

The differential equations for the first and second order approximations were too complicated to be amenable to analytic solutions.
The boundary conditions at the shock become

$$V^{(0)} = \frac{2\delta}{\gamma+1}\ ,\ R^{(0)} = 1\ , P^{(0)} = \frac{2\delta^2}{\nu+1}\ldots\ldots\ldots\ldots \quad (2.19)$$

Integrating equation (2.16) to (2.18) with boundary conditions (2.19), we obtain the solution as

$$V = V^{(0)} = \frac{1-\sqrt{1-4(\frac{1-\delta}{\delta})A\lambda^{1/\delta}}}{2(\frac{1-\delta}{\delta})}\ldots\ldots\ldots \quad (2.20)$$

$$R = R^{(0)} = \frac{B}{\nu-\delta}e^{\omega}\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2.21)$$

$$P = P^{(0)} = CR^{\gamma}e^{-\epsilon}\lambda^{-2/\delta}\ \ldots\ldots\ldots\ldots \quad (2.22)$$

where, $A = \frac{2\delta(\gamma+2\delta)}{(\gamma+1)^2}$

$$\omega = -(\nu-w)\{A\lambda^{1/\delta}+\frac{SA^2\lambda^{2/\delta}}{2}-\left(A+\frac{SA^2}{2}\right)$$

$$+\frac{1}{\delta}\left(A^2\frac{\lambda^{2/\delta}}{2}+S^2A^4\lambda^{4/\delta}+2SA^3\frac{\lambda^{3/\delta}}{3}\right)\}$$

$$-\frac{1}{\delta}\left(\frac{A^2}{2}+\frac{\delta^2A^4}{4}+2S\frac{\lambda^3}{3}\right)$$

$$S = \frac{1-\delta}{\delta}\ ,\ \ B = \ [R(\nu-\delta)e^{-\omega}]_{\lambda=1}$$

$$C = \left[PR^{-\gamma}\lambda^{2/\delta}e^{\omega}\right]_{\lambda=1}$$

$$\epsilon = -\left\{\eta A+\frac{A^2}{2}\left(\eta S+\frac{\eta\delta-2}{\delta^2}\right)+\left(\frac{\eta\delta-2}{\delta^2}\right)\left(\frac{A^4S^2}{4}+\frac{2SA^3}{3}\right)\right\}+$$

$$\eta A\lambda^{1/\lambda}-\frac{\lambda^{2/\delta}A^2}{2}\left(\eta S+\frac{\eta\delta-2}{\delta^2}\right)+\frac{\eta\delta-2}{\delta^2}\left(\frac{S^2K^4\lambda^{4/\delta}}{4}+\frac{2SA^3\lambda^{3/\delta}}{3}\right)$$

$$\eta = w(\gamma-1)+2$$

III. Results and Discussions

Equations (2.20) to (2.21) give the solutions for the reduced particle velocity, density, and pressure up to zeroth approximation. The differential equations for the first and second-order terms in ε were not amenable to an analytic solution. The error in the solution is of order O(γ), which is small if γis of O(1). Usually, the solution is obtained by integrating similarity equations (2.1) to (2.3) starting with the known values of flow variables at the shock, given by equation (2.6) and imposing the condition that the solution curve must pass through the appropriate singular point. Ranga Rao and Purohit[10] have given numerical solutions for the spherical piston for $\gamma = \frac{7}{5}$, w = 1.5, by integrating the ordinary differential equation in terms of a new dependent variable, $Z = \gamma\ \frac{P}{R}$ and V. They started the integration from the known value at the shock and continuing until the value $\bar{\lambda}$ is reached such that $V(\bar{\lambda}) = \delta$. Our analytic solutions give the flow variables distributions for plane, cylindrical and spherical symmetry for different values of n and w, which satisfy the similarity conditions (2.10) and (2.12) with accurate trends and values.

Solutions for the flow between the piston and shock have been depicted graphically in figures1 to 6, for the spherical, cylindrical and plane symmetry for different values of n, when $\gamma = \frac{7}{5}$, which is of importance in astrophysics.

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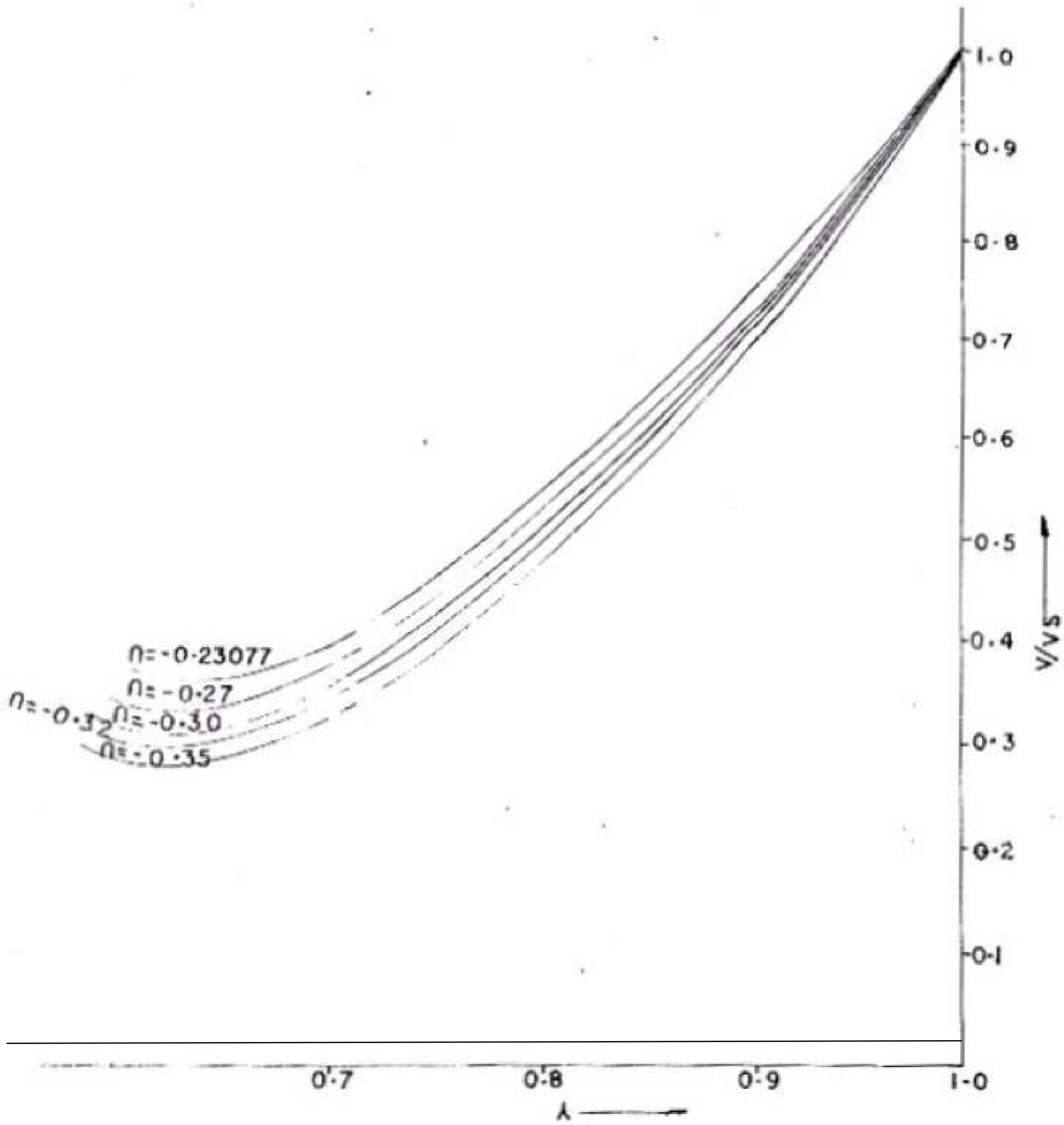

Fig. 1: Velocity Distribution for Spherical Symmetry

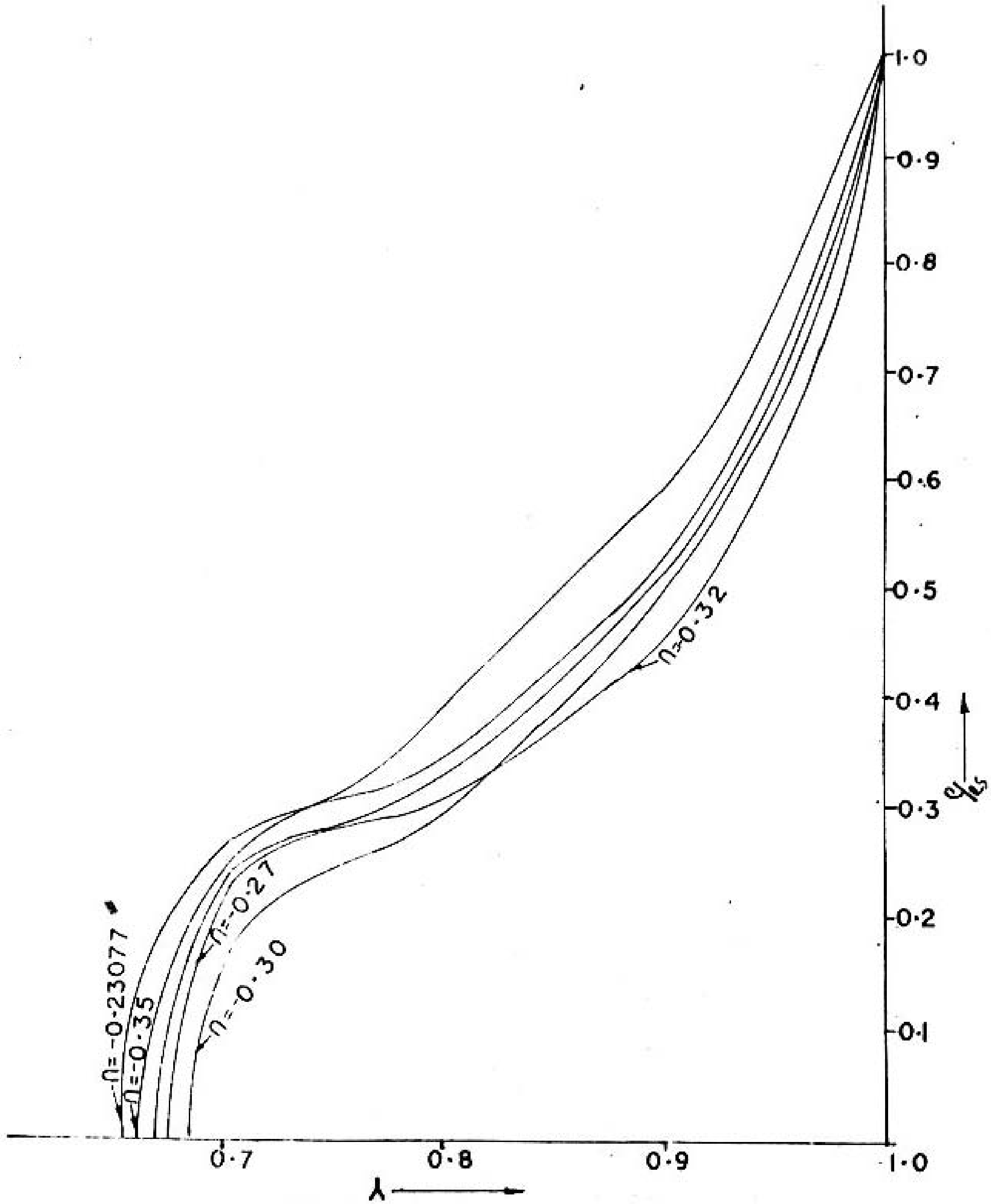

Fig. 2: Density Distribution For Spherical Symmetry

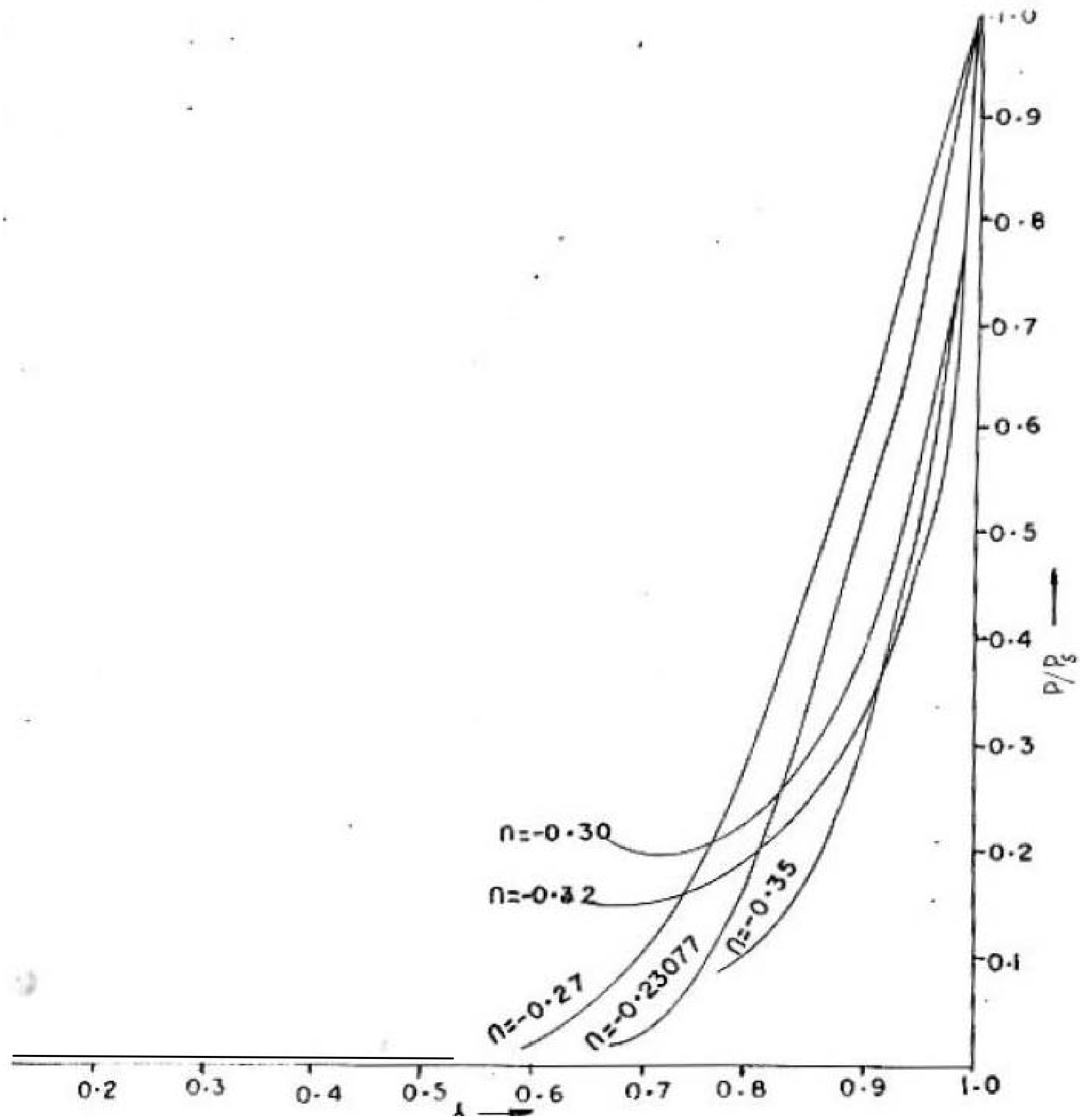

Fig. 3: Pressure Distribution For Spherical Symmetry

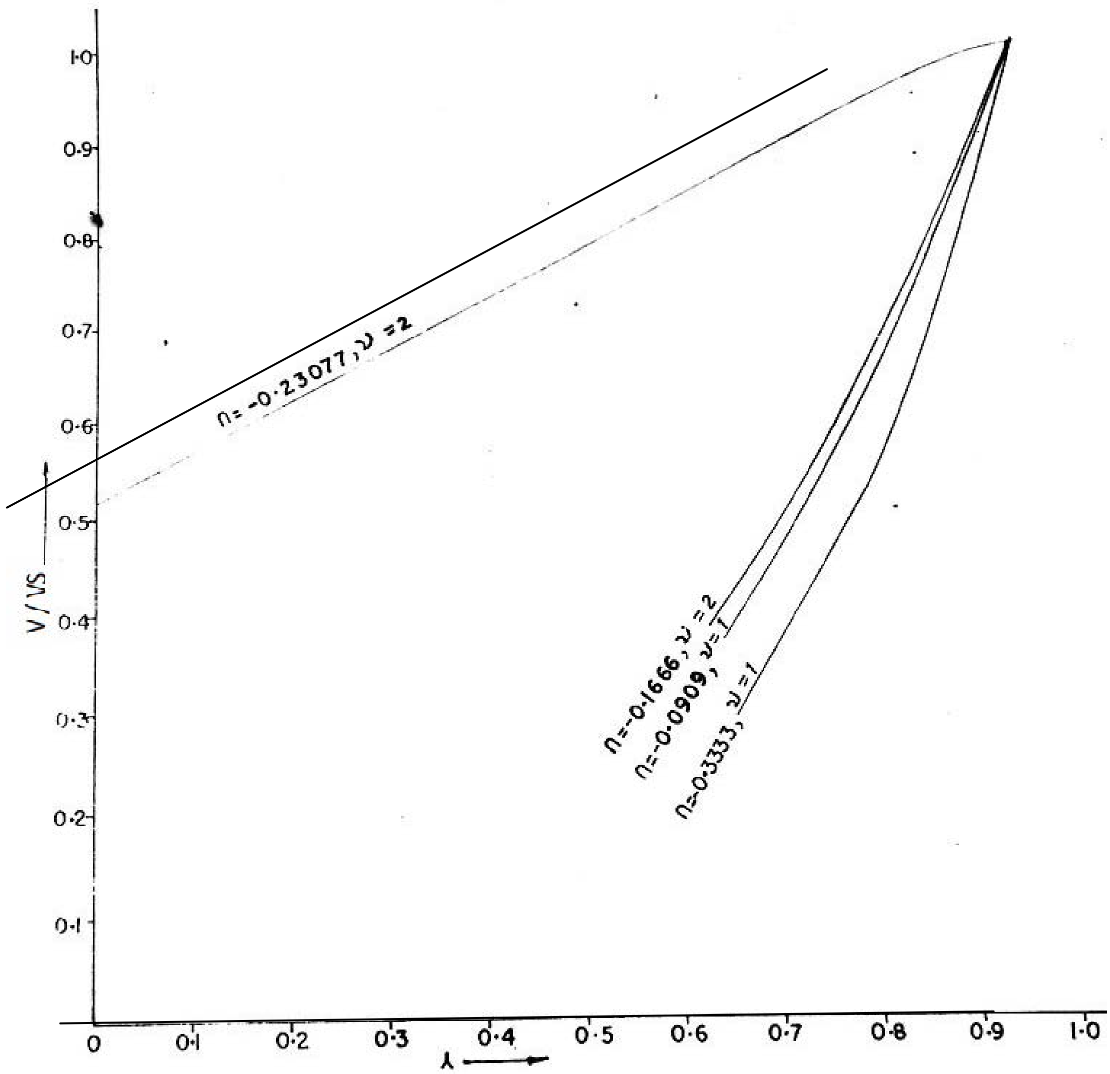

Fig. 4: Velocity Distribution Behind the Shock for Cases with Clyindrical and Plane Symmetry

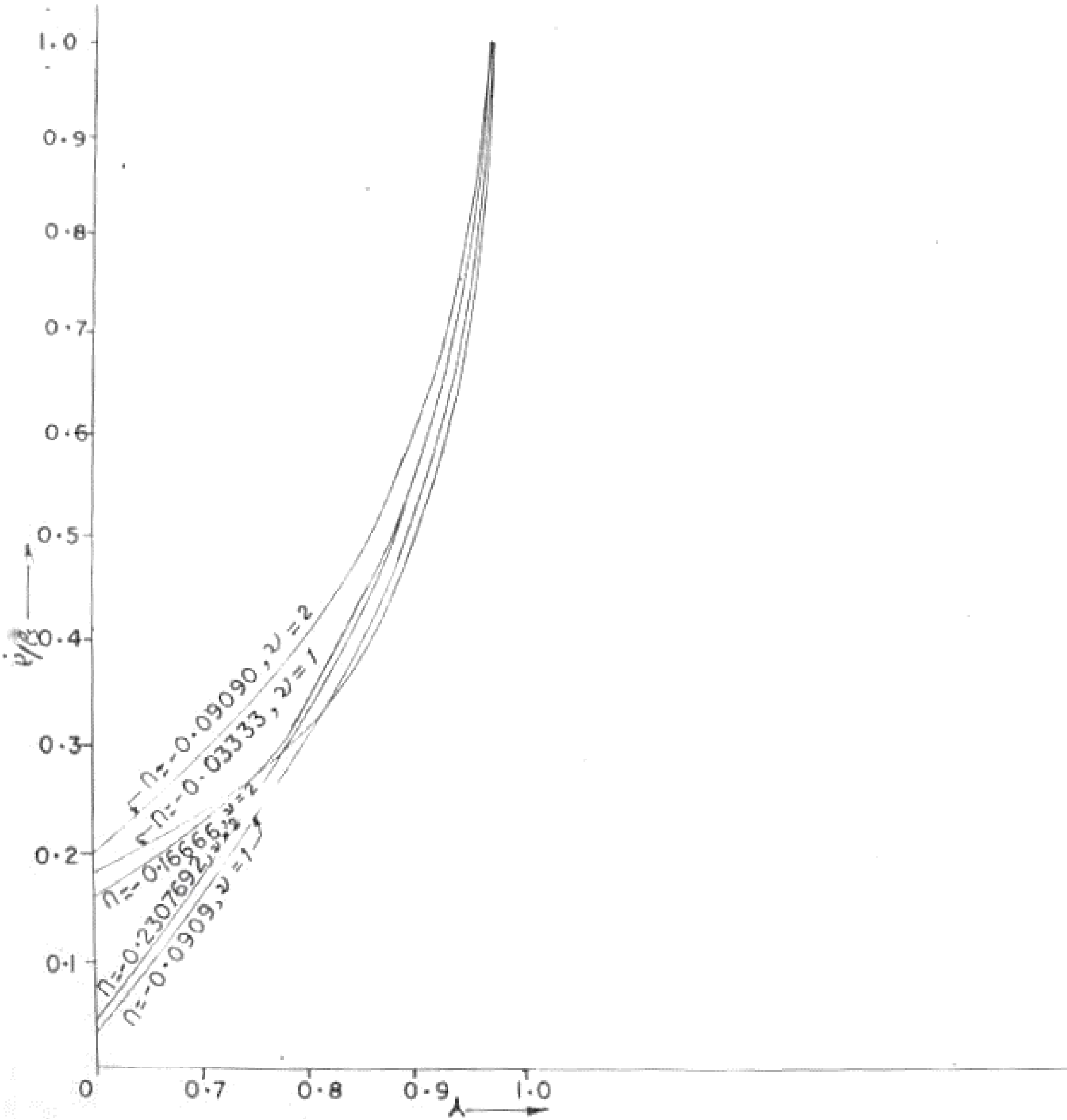

Fig. 5: Density Distribution Behind the Shock for Cases with Clyindrical and Plane Symmetry

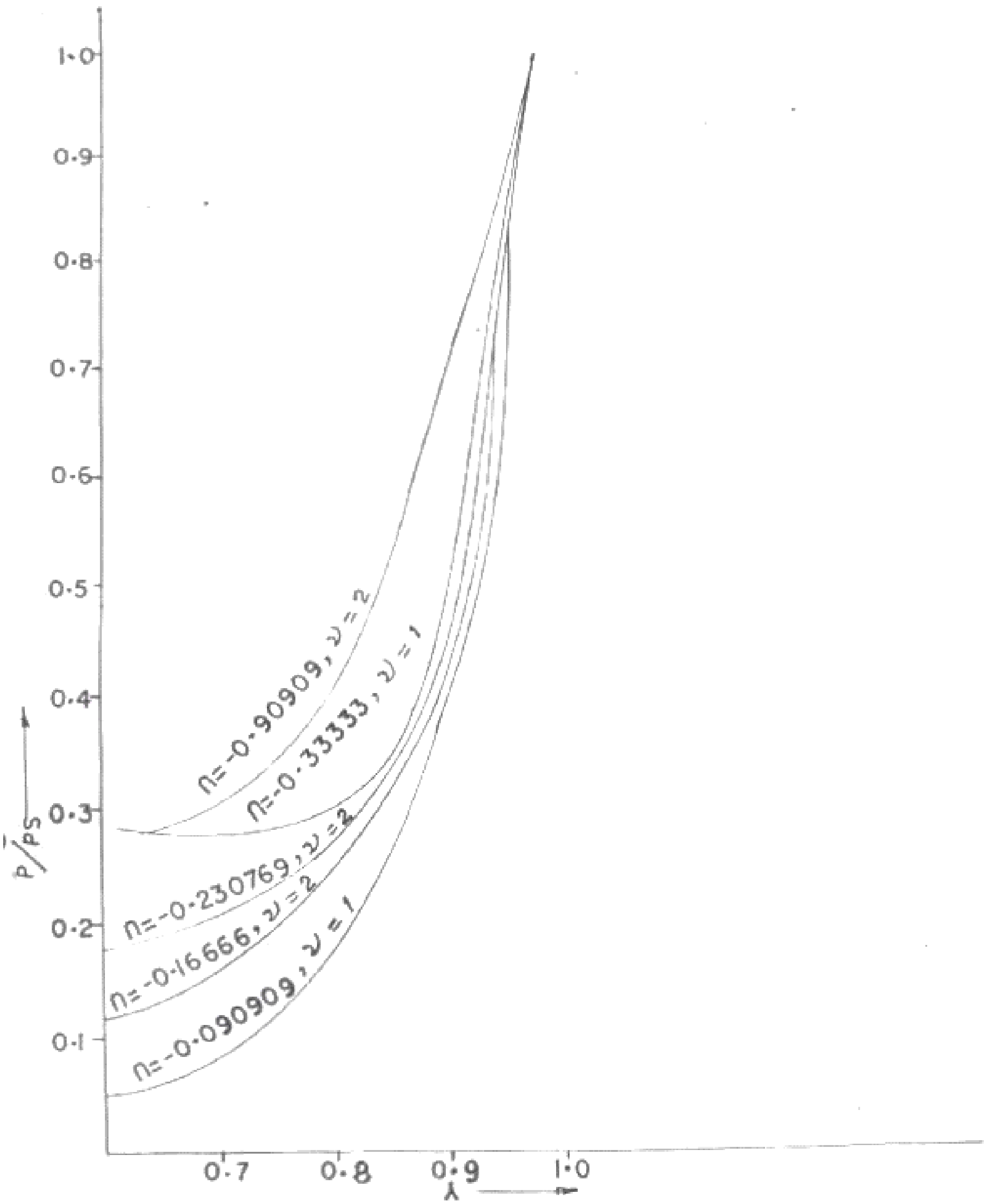

Fig. 6: Pressure Distribution Behind the Shock for Cases with Clyindrical and Plane Symmetry

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Slip Plane in the Ether V

By Paul T E Cusack

Abstract- In this paper, we consider the Ether as a partial crystal material. We consider the natural slip plan that is, for fluorocarbons, a natural break points that lines up with AT Math. We also consider the phase diagram that shows that the crystal is triclinic. These calculations show that the Ether is modelling as the partial crystallization of polytetrafluorethylene.

Keywords: face centered cube; crystallization; triclinic crystal.

GJSFR-A Classification: FOR Code: 010107

SLIPPLANEINTHEETHERV

Strictly as per the compliance and regulations of:

Slip Plane in the Ether V

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Keywords: face centered cube; crystallization; triclinic crystal.

I. Introduction

Two important facts about Astrotheology is that the universe exists where the force and momentum are equal; and that the moment is (1-sin 1 rad.) One radian is ~60 degrees of course. In this paper, we make use of these facts coupled with Materials Engineering to see why these two values are important. We begin with the face centered cube.

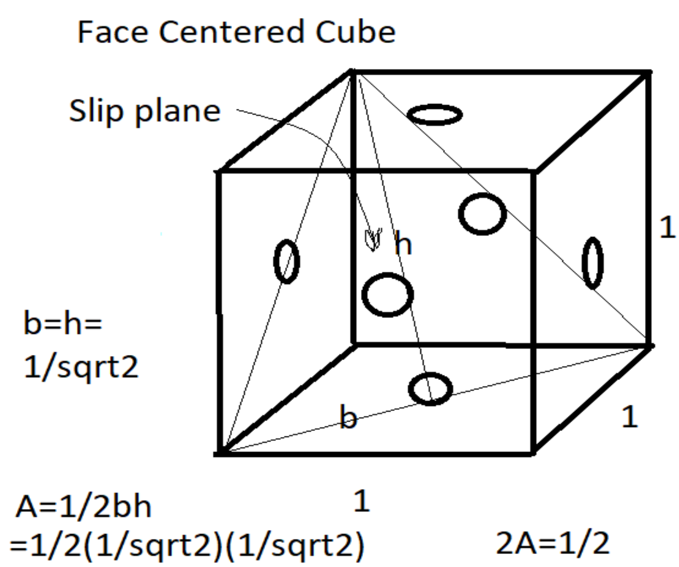

Figure 1: Face Cantered Cube

Knowing that the slip plane if area=0.5, we can calculate the critical stress that allows failure and thus movement.

σ=τ/[cos θcos γ]

Let θ=γ=45°

σ=τ/[(1/√2)(1/√2)]

σ=2τ

σ=F/A

=8/3/(1/2)

=16/3

σ=2τ

16/3=2τ

τ=8/3=S.F.

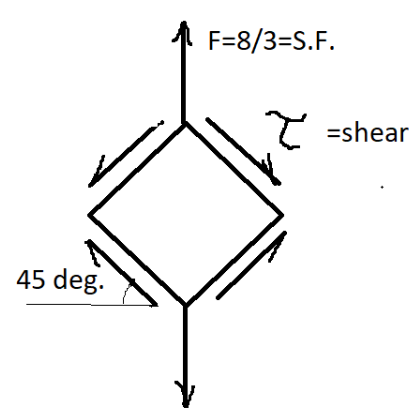

Figure 2: Shear Unit Cell

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We know from pervious papers on Astrothoelogy that the critical force – the Superfoce (S.F.) =8/3, or 2.666 We see from the free body diagram that the critical factor become 1/7 or the economic multiplier, important in Astrotheology.

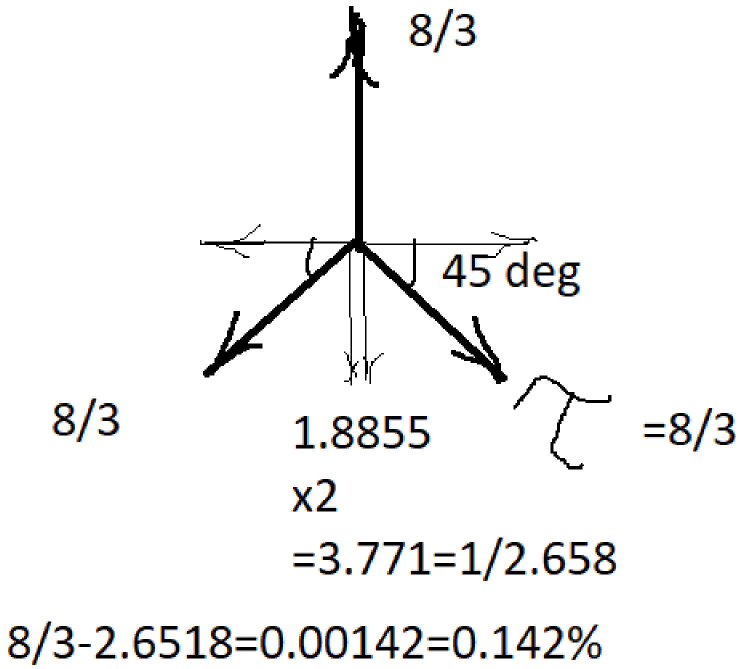

Figure 3: Free Body Diagram

We have previously calculated that the Ether is 76.6% crystalized. The perimeter of the crystals would be:

Perimeter= 2(100)+2(76.7)

=3.532

2(100) + 2(23.3)

=246.6

3.532/246.6=14.32%

Temperature:

T=300

T=327; T=-97.

327-(-97)=424

424/300=1.413

424/27=0.1590=1-sin 1 =Moment

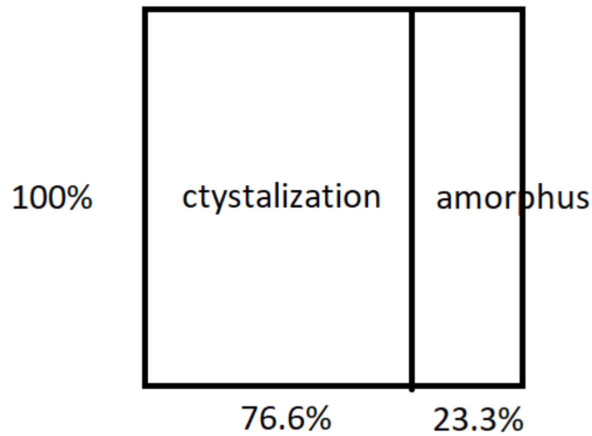

Figure 4: Percent Crystallization Perimeter

Mass +Time=Total Energy

P.E. + K.E. =T.E.

$Mc^2+Mgh+ +1/2Mv^2=1$

C=v~3

9M+ 6.67M+ 4.5M=1

201.7M=1

=Dampened Cosine Energy=Y

$Y=e^{-t}\cos\theta$

$201.7=e^{-t}\cos 60°$

$e^{-t}=403.4$=Re

t=-6

M=1/201.7=0.497~0.5 =.5 E

M=0.5E=t

Universal Vector=12.82

9M+12.82(6.67)+4.5M=1

9.900M=1

M=101000

Ln 1.01=0.00

1x8 x sin 1 x6=403=Re

Failure:

Using data from Magnesium which is close in some respects to Teflon:

$(K/\sigma)^2=19.6$

σ=F/A

=8/3/1=8/3=2.666

$\sigma^2=0.711$

$K^2/\sigma^2=19.6$

$K^2/0.711=19.6$

K=118.0 (Mass of Periodic Table of the Elements)

$Pressure=2/[Y^2\pi R](K^2/\sigma_y)$

$=2/[\ 8/3\ \pi\ (1)]\ (118^2/8/3/1)$

=124.6

~1.25

$=E_{min}$

PV=freq=1/t

(124.6)(190905)=403=Re

Re=T.E./ K.E.

$=1/\ [1/2\rho v^2]$

$=1/(0.5)(127.3)(1/\sqrt{2})^2$

=1/3.14

$=1/\pi$

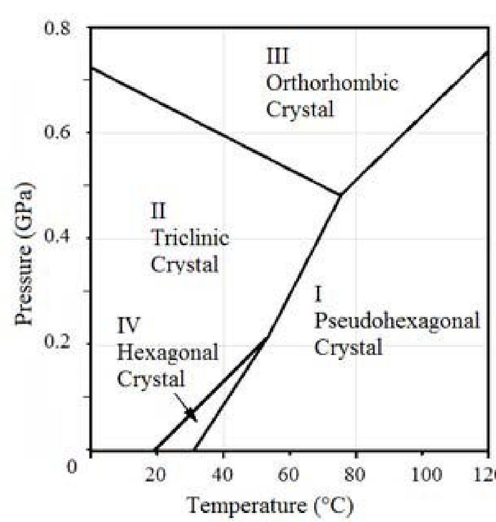

Figure 5: T=-273.15+300=28.6 deg C
Pressure=0.932

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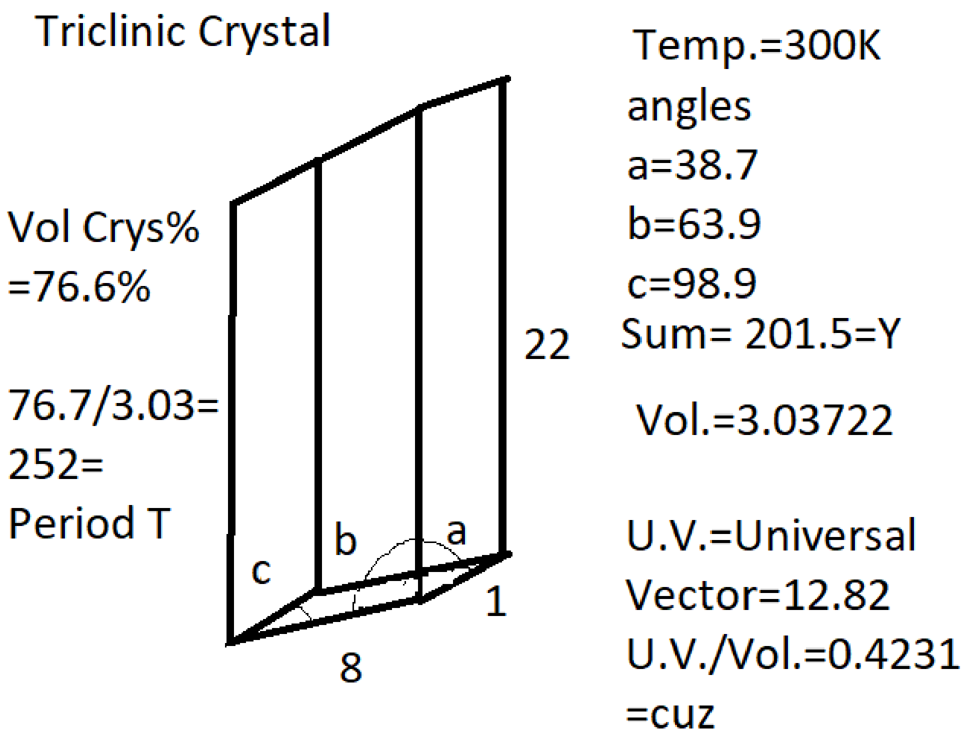

Figure 6: Triclinic

Perimeter:

2[8+22]=60

60/x=76.666/100

x=782

782/246.6=3.17=1/PI

II. Conclusion

Material Science provides some insights into why the ether is a face centered cube; why the superforce is 8/3; and why the crystallization is 76.6%.

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Epistemological Dualism between Einstein's Relativity and Quantum Mechanics in the Five-Dimensional Continuum for Universe

By S. I. Konstantinov
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Abstract- The article is an answer to the call of Dr. Stefano Veneroni, the Catholic University of the Sacred Heart explain the relationship between the continuum and discreteness in the epistemological model of the classical theory and explain how can Quantum Mechanics explain the connection between matter, antimatter, and gravitation, while being respectful of the (phoronomic) rules of general relativity? To answer the Dr. Stefano Veneroni questions, I first propose to recognize that Minkowski's space-time, as well as an attempt Einstein in General Relativity Theory to generalize it to the case of accelerated motion, cannot be accepted as the basic model for describing the Universe. As such a basic model, the author sees the Finsler space of projective geometry, which allows combining the coordinate space and the space of impulses into a single continuum. In the article emphasized the role of the theory of global resonance in the birth of particles and the self-organization of matter in the five-dimensional continuum of the Universe.

Keywords: continuum, particle, time, space, resonance, quantum vacuum.

GJSFR-A Classification: FOR Code: 010503p

EPISTEMOLOGICALDUALISMBETWEENEINSTEINSRELATIVITYANDQUANTUMMECHANICSINTHEFIVEDIMENSIONALCONTINUUMFORUNIVERSE

Strictly as per the compliance and regulations of:

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I. Introduction

In his appeal in 2014, Dr. Stefano Veneroni, the Catholic University of the Sacred Heart Department of Philosophy, asked a question: "How can Quantum Mechanics explain the connection between matter, antimatter, and gravitation, while being respectful of the (phoronomic) rules of general relativity? How can we explain the relationship between the" continuum "and" discreteness "in the epistemological model of the" classical "theory?"[1]. Today, in 2020, I offer you an answer. Relativistic invariance, which is based on subjective Spatio-temporal representations, is not consistent with quantum-mechanical non-locality, which is objective. This manifests internal contradiction of a unified quantum-relativistic field theory, leading to insurmountable difficulties in solving the problems of the quantum theory of gravity, unified theories, and the derivation of space and time representations from the physics of the microworld [2].

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II. The Relationship between the "Continuum" and "Discreteness" the Epistemological Model of the "Classical" Theory

Proposed by mathematicians tests for constructing a discrete model of the world: the r-model of Ahmavaar, the geometry of the causal sets of Rafael Sorkin, the quaternion geometry of David Finkelshtein, Penrose's twistor program to provide an alternative description of Minkowski's space which emphasizes the light rays rather than the points of space-time did not find sufficient physical justification. Professor Lee Smolin notes that numerous versions of String Theory are at an impasse, and primarily because they are based on Einstein's STR and GTR, and also based on imaginary frozen time [3]. The term "frozen time" was introduced into physics by Professor Lee Smolin, an American theoretical physicist. He appealed to the scientific community to find a way to unfreeze time - to imagine a time without turning it into space. He's writing: "I have no idea how to do this. I cannot imagine the mathematics that cannot imagine the world, as if it were frozen in eternity". [3] My article "Epistemological optimism of knowledge of the physics of the Universe" has the answer to Lee Smolin's question. [4]. The time represented by two-component numbers and, in particular, complex numbers allows us to describe reality in its dynamics. Based on the mathematical apparatus of modern projective geometry, the article proposes to combine the coordinate space and the space of impulses into a single geometric design, considering them in the framework of the five-dimensional continuum (two coordinates time and three spatial coordinates).

There is an answer to the question Stefano Veneroni. In one particular example of the birth of a particle and an antiparticle in a quantum vacuum (dark matter) in the process of its polarization, one can trace the relationship between a quantum (particle) and a five-dimensional continuum capable of describing irreversible processes. Einstein's universe is a closed universe with constant entropy since, in such a universe; there is particle production no irreversible processes with symmetry breaking in time. Nobel Prize winner I.

Prigogine believes that for description of the birth of matter in Einstein's general relativity is necessary to be considered variations in the density of matter due to the production of particles. For this, the Dr. I. R. Prigogine proposed to add the number of variables included in the standard model (the pressure P, the mass-energy density σ and the radius of the universe R (t)) an additional variable n - the density of the particles and an additional equation, which would tie the Hubble function of radius of the universe R (t) and the birth of particles n. In the case of the universe, consisting of particles of the same type of mass M, when the mass-energy density is simply equal to σ, and the pressure P - vanishes, Prigogine offers a simple equation that takes into account the creation of particles [5]:

$$\alpha H^2 = \frac{1}{R^2}\frac{\partial nR^3}{\partial t} \qquad (1)$$

Where α - kinetic constant equal to zero or positive.

In this equation (1), the value of α and H are positive since we are talking only about the birth (and not destruction) of the particles. In Minkowski's space, where H = 0, the production of particles cannot be (equation Hψ = 0 equation is often called the Wheeler – DeWitt Equation). Furthermore, in Einstein's Universe, the total number nR^3 constant irrespective H values, α = 0.

The quantum vacuum is a global field of oscillators' super-positions with the continuum of frequencies. When the quantum vacuum of the Universe is excited by cosmic radiation or relativistic particles, the resonances accompanying the birth of new particles will occur whenever the frequency of external cosmic radiation and particle coincide. The evolution of dynamical systems (particles) to self-organizing matter depends on the resonances between the degrees of freedom in a quantum vacuum (dark matter). I. Prigogine wrote, "If the systems are independent, then for coherence and self-actualization, there would be simply no place as all dynamic movements would essentially be isomorphic movements of free (non-interacting) particles." [5]. Proved by Poincare, the non-integrable dynamical systems and the theory of resonant trajectories by Kolmogorov-Arnold-Moser allowed Prigogine to conclude that the mechanism of resonance interaction of particles in large-scale Poincare systems (LPS) was "essentially" mandatory (the probabilistic outcome is 1) so the particle (quantum of matter) and the Universe (five-dimensional continuum containing three spatial dimensions and two temporal) are is always interconnected by resonances [5].

III. Space and Time is Phantoms of the Material World

Visually, the three-dimensional space is represented and described according to Kant by Euclidean geometry in Cartesian coordinates. Descartes imagined space as something unchangeable, like an empty box, inside of which occur physical processes. Kant's idea to introduce space based on the specific physical laws. Kant linked the three-dimensional space with the law of decreasing strength is inversely proportional to the square of the distance. He wrote: "The three-dimensionality possible on what substances act on each other in such a way that the force of action is inversely proportional to the square of the distance." The geometric representation of this law is a sphere. If we place the observer in the center of the sphere, the space will appear three-dimensional. The relativity of space means that it depends on the attitude and the mechanical interactions of the bodies among themselves. According to Kant Euclidean space three-dimensional, because the forces of interaction between material bodies (the law Cavendish) and electric charge (Coulomb's law) are inversely proportional to the square of the distance. If body interact according to the directly proportional law F = k · x (Hooke's law), they, according to Kant, describe the time running away from the observer in straight lines into the future. This is the cosmological time of the existence of a phenomenon (object in the Universe) from its birth to its disappearance. In this case, time would not have continuity and should be discrete (the lifetime of the phenomenon). Cosmological antigravity in the standard ΛCDM (Λ- Cold Dark Matter) model is described by linear force depending on the distance:

$$Fe = (c^2 / 3) \cdot \Lambda \cdot R, \qquad (2)$$

Where Λ is Einstein's cosmological constant, and R is the distance [6].

If the deformation arising the elastic spring or in the intergalactic medium (dark energy) would is proportional to the force applied to the body of F = k · r (Guka's law), space-time will represent straight lines that go from the observer to infinity. Obeying this cosmological law time is linear and discrete, this is the so-called Eddington's arrow of time, which describes the real processes of evolution of each object of the Universe individually, for the entire period from its birth to disappearance. Wherein, time is two-dimensional. This noted by Nobel laureate I. P. Prigozhin in his book Time, Chaos, Quantum. He wrote: "We need to go beyond the concept of time as a parameter that describes the movement of individual systems. Inharmonic oscillators (classical and quantum), time is uniquely related to the laws of motion, but in non-integrable systems, time plays a dual role. If stable stationary systems are associated with the concept of determinate cyclic time, then for unstable, developing systems, the concept of probabilistic vector time is applicable." [5]. Prigogine speaks of the arrow of time Eddington, which shows the vector of further development of the system at a new level or its disappearance, which reflects the discreteness of cosmological time. The planets of the solar system are classical oscillators for which cyclic time is measured by the number of revolutions of the planet around its axis and around the sun. The actual, cosmological time of the planet determines the time of its linear evolution from birth to extinction. Using the theory of linear measures of sets, professor of St. Petersburg University I.N. Taganov proved that if the state of physical processes is always measured with finite uncertainty (the Heisenberg uncertainty relation between the coordinates and momentum of a particle and the time and energy of particles in the microworld), then the moments of physical time can be represented only by two-component numbers and, in particular, complex numbers. In the book "Physics of Irreversible Time" I.N. Taganov suggested that the spiral with variable pitch and diameter in pseudo-Euclidean three-dimensional space can serve as a geometric way of complex physical, not the frozen time [7].

Figure 1: Spiral of time

The Argentine philosopher and physicist Professor Mario Bunge introduced the complex time T_e into electron theory:

$$T_e = (t + i\tau) \quad (3)$$

Where t is the electron's existence time in a given orbit in an atom, and τ is a constant cyclic time equal to the electron spin period [8].

Minkowski's flat space, as well as an attempt to generalize it to the case of accelerated motions, i.e., Einstein's GRT space-time, cannot be accepted as basic geometric models for describing the not frozen dynamic evolving world in which we live. Based on the mathematical apparatus of modern projective geometry, scientists come to new, more general conservation laws inherent in the physics of open systems [9]. Moreover, in the five-dimensional continuum, a synchronous interdependence of the change in the state of the body is provided when describing its motion in the momentum representation with a description of its motion in the coordinate representation. First of all, this is the theoretical justification of a space having bundles Xm (Xn) for the geometrization of dynamical systems. The basis of the representation of a layered space is: the base is a n-dimensional differentiable manifold Xn (base-coordinate space), and the layer is a m-dimensional manifold (layer is a momentum space). The return of the system to its initial state is crucial in the formation of the concept of "base". It allows you to describe the behavior of the system (classical and quantum oscillators) by symmetric, invariant equations Einstein's GRT. This state of the system corresponds to the concept of a time horizon during which we can predict its development path. The system's transition to a qualitatively new level, during which the system becomes non-integrable, irreversible processes prevail in it, and time loses the invariance property and its behavior is probabilistic, the vector character corresponds to the concept of "layer" [4].

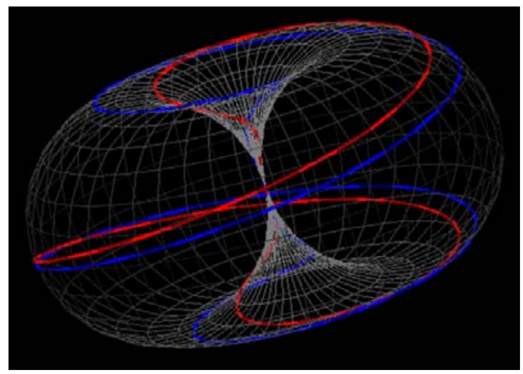

Figure 2: The geometrization of dynamical systems. Representation of a layered space is the base and the layer in the five-dimensional continuum (two temporal coordinates and three spatial coordinates)

If we recall the existence of a layered space consisting of a base and a layer, we can assume that the four-dimensional Minkowski – Einstein world describes precisely and only the "base" where symmetric and invariant equations reign and the system is in a stationary integrable state. The limitedness of the General Theory of Relativity does not give scientists the right to drive physical reality into the Procrustean bed of Einstein's invariant, symmetric solutions. The imaginary part of the complex time — cyclic time — corresponds to this state [2]. The five-dimensional continuum proposed in the article, which includes two temporal coordinates and three spatial coordinates, absorbed all the advantages of the Kaluza five-dimensional world over the flat four-dimensional Minkowski continuum, revealed the connection of the macrocosm, including temporal representations, with microcosm, charge and mass of elementary particles, with the presence of the space environment (dark energy and dark matter), with the existence of vector, and scalar fields [4]. His predecessor can be considered Eddington's Five-Dimensional Continuum (Paranoid), which includes, in addition to the four-dimensional continuum of Minkowski the fifth time coordinate [10]. The Eddington's Paranoid is the object under study environment (the entire universe is composed of elementary particles). It contains, in addition to the four dimensions of the continuum Minkovsky (x1, x2, x3, t), the fifth - time t0. “The E-frame provides a fifth direction perpendicular to the axes x1, x2, x3, t; and the position vector can be extended t0:

$$X = E15\, ix1 + E25\, ix2 + E35\, ix3 + E45\, t + E05\, t0, \quad (4)$$

Where according to the real conditions, t0 should be real” [10]

Einstein’s gravitational field in the space of five dimensions is exactly and completely equivalent to ordinary gravity plus the Maxwell electrodynamics equations and one more scalar field. The fifth component of the particle velocity has the physical meaning of the ratio of the electric charge q to the mass m of the particle. The fifth equation of the geodesic line means a constant q / m ratio for the current state of the planets in the solar system (current time horizon). It is even true that the momentum of particles in the fifth coordinate is an electric charge [11]. Spatial and temporal diversity of different dimensions different properties introduced into these discrete transformations P-space conversion, the conversion time T, and C charge conjugation. The 5-dimensional manifold instead of the square of the 4-dimensional interval $\partial s^2 = g_{\alpha\beta}\, \partial x^a \partial x^\beta$ should take $dl^2 = GAB\, \partial x^A\, \partial x^B$, where the indices A and B have the meanings: 0,1,2,3,5. GAB values are components of the five-dimensional metric tensor. They form a square matrix having a generally 15 independent components:

$$GAB = \begin{matrix} G00 & G01 & G02 & G03 & G05 \\ G10 & G11 & G12 & G13 & G15 \\ G20 & G21 & G22 & G23 & G25 \\ G30 & G31 & G32 & G33 & G35 \\ G50 & G51 & G52 & G53 & G55 \end{matrix} \quad (4)$$

In the curved R iemannian space-time, operating with the components of the five-dimensional metric tensor, one can obtain ten components of the metric tensor of the Einstein’s general theory of relativity, four components of electromagnetic vector potential $\bar{\mathbf{A}}$ of the Maxwell theory, and one component which theoretically can describe any new scalar field [11]. The new scalar field may belong to a hypothetical particle of dark matter the protophobic X boson, which, like the Higgs boson, creates the scalar field responsible for the fifth interaction between dark matter and ordinary (baryonic) matter. Dr. Jonathan Feng from the University of California, Irvine, in a press release in 2017 said: “For decades, we've known of four fundamental forces: gravitation, electromagnetism, and the strong and weak nuclear forces. Discovery of a possible fifth force would completely change our understanding of the universe, with consequences for the unification of fifth force and dark matter. The protophobic X boson of dark matter makes it possible to explain a number of experiments in which the anomalous magnetic moment of the muon is observed and is associated with the fifth interaction”. According to the head of the group Jonathan Feng, if in the future experiments the fifth force is confirmed, this will completely change our view of the Universe [12]. Unlike the “geometric” concept of A. Einstein's gravity, autor in his article adheres to the “field” concept of gravity, which allows one to describe gravitational interactions of bodies similarly to electric and magnetic interactions. In this case, gravitational fields should have properties similar to, but not identical to, the properties of electromagnetic fields. The “field” concept of gravity does not contradict other experimentally grounded approaches in describing the phenomenon of gravitation and inertia, in particular, for example model the Universe involving a quantum vacuum (dark matter). The equation of gravity $G\mu\nu = 8\pi G T\mu\nu$, obtained by Einstein within the framework of the general theory of relativity, relates the curvature of the space $G\mu\nu$ to the energy-momentum tensor $T\mu\nu$ and the Newtonian gravitational constant G, due to the spatial in homogeneity of the Universe as a whole relate to its individual parts. Einstein's predictions regarding the type and the speed of gravitational waves in the new cosmology need to be clarified. A more complete equation of the field, taking into account the polarization medium of quantum vacuum (dark matter), was presented in 1998 by professor of the Institute of Mathematics of the Russian Academy of Sciences V. Dyatlov [13]. The new equations include the density of matter and its speed as independent variables, their closure is possible only with the use of continuum mechanics. The equivalence principle predicts the same acceleration for bodies of different composition in the same gravitational field and allows us to consider gravity as a geometric property of space-time, which leads to the interpretation of gravity from the perspective of the General Theory of Relativity [6]. In the general theory of relativity (GR), Einstein proposed a new interpretation of acceleration. Acceleration, which Newton explained in terms of gravitational and inertial interaction, is considered in GR as the result of curved space-time. In Einstein's gravitational theory, the curvature of space-time (Gravity funnel Fig. 3) determines the existence of matter-energy. The equations of Einstein's general theory of relativity are usually written in such a form that the left side is expressed through the space-time curvature tensor and has a purely geometric nature, and the energy-momentum tensor of matter and fields of various natures is on the right side:

$$R\mu\nu - \frac{1}{2} g\mu\nu = \frac{8\pi G}{c^4}\, T\mu\nu \quad (5)$$

Where $R\mu\nu$ is the Ricci tensor; $g\mu\nu$ is the event space metric tensor; $T\mu\nu$ is the energy-momentum tensor of matter.

Einstein himself was unsatisfied with such a separation of geometry and matter in equations. Indeed, the form of the mathematical tensor was the result of subtle geometric considerations, while the stress tensor, which defines the "source" of space-time curvature, is described in terms of macroscopic concepts of pressure and energy density. Einstein compared his equations with a building, one wing of which is built of precious marble, and the other is made of cheap wood [14]. Newton's law of gravity mathematically confirms long-term observations of the planets of the solar system. With its help, the positions of the planets for many years are calculated, but no one calculates the position of the Sun relative to the planets since the Sun is always in the center of the heliocentric coordinates. The world for this law is the planets of the solar system. For other objects of the solar system, the applicability of this law is not a fact. If we try to calculate the force of attraction not between the Sun and the Earth, but between the Earth and the Sun, it will not be clear how the Earth, whose mass is small relative to the Sun, can attract the Sun to itself. Earth in orbit is held by the gravitational force of the Sun and centrifugal force, but there is no centrifugal force of the Sun relative to the Earth. Therefore, if the Earth begins to attract the Sun to itself, then this will lead to a collision of the Sun with the Earth. From the above, it can be concluded that the size of the gravitational funnel created around rotating the Earth by vortices of excited quantum medium (dark matter) does not reach the Sun, and the Earth falls into the region of the gravitational funnel of the Sun. Indeed, it has been experimentally established that the radius of the Earth's gravitational funnel is approximately 900,000 km, and the distance from the Earth to the Sun is 150,000,000 km. [15] In the solar system, the effects of gravity of the sun and gravity of the planets are delineated! Planetary gravity funnels have finite dimensions and do not overlap with each other (Figure 3).

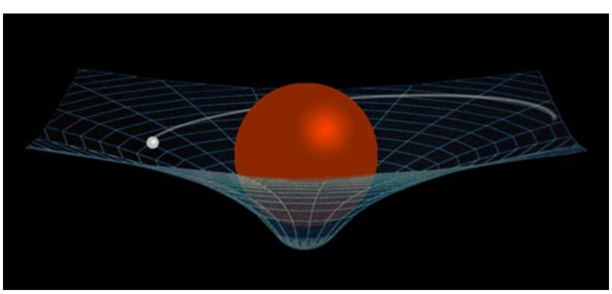

Figure 3: Gravity funnel

It should be noted that the geometry, on which Newtonian mechanics is based is Euclidean geometry, these are Cartesian rectangular coordinates. Professor Gennady Shipov proposed in the monograph: "The Theory of Physical Vacuum. Theory, experiments, and technology" of mechanics that additionally take into account rotational effects [15]. He managed to connect the Cartesian coordinate system with the six angular coordinates of Euler and get the eleven-dimensional Weizenberg geometry. It turned out that, within the framework of such a geometry it was possible to explain a series of experiments in which the law of conservation of energy is violated. The excitation of quantum vacuum (dark matter), caused by the accelerated motion of bodies or their rotation, leads in open systems to the violation of the symmetries, conservation laws, and prohibitions caused by them. I suggest into account this fact in classical and quantum mechanics, in theories of quantum electrodynamics (QED) and quantum chromodynamics (QCD).

As you know, the laws of symmetry play an important role in establishing the laws of Nature (laws of motion and conservation). It is believed that the laws of Nature do not change with uniform and rectilinear movement. This statement is called the "principle of relativity." Albert Einstein made an attempt to extend this principle to any, including accelerated types of movement. However, Einstein was not able to achieve the desired result. Academician V.A. Fok drew attention to this circumstance [16]. An impeccable, from a mathematical point of view, solution of the problem of extending the principle of relativity to accelerated movements dictates the need to combine the coordinate space $R^4(x)$ and the momentum space $R^4(p)$ in a single mathematical construction for open systems that take into account the effect of quantum vacuum (dark matter). The indicated spaces are dual (mutually complementary) to each other, although they belong to two different classes of measurements. Here we use the following notation $x = (t, \mathbf{r})$, where **r** is a three coordinate vector; $p = (E, p)$, and p is the three pulse vector in the system of units c = 1, h=1.

For a geometric space, which in reality could satisfy the principle of relativity for any movements, the action integral should remain invariant with respect to translation in the space of momenta. Dr. V. G. Zhotikov, V.G.in his monograph "Introduction to Finsler geometry and its generalization (for physicists)" proves that the structure of the necessary space, combining both of the above spaces, should be endowed with the properties of projective geometric space [9].

IV. Conclusion

In light of the foregoing, the question I can be posed as to what constitutes the cosmic fabric of space-time in Einstein's general theory of relativity. Let us recall the famous report of Minkowski made on September 21, 1908, at the 80th meeting of German naturalists in Cologne: "Gracious gentlemen! The view on space and time that I intend to develop before you has arisen on an experimental physical basis. This is their strength. From now on, space in itself and time in

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itself must turn into fiction, and only a certain kind of combination of both should remain independent" [17]. How true were these predictions of Minkowski? In fact, at the beginning of the 20th century, as a mathematical model of space-time SRT, Einstein declared a geometric space of a special kind. It received the name "Minkowski space." In the mid-20th century, the Russian mathematician, academician L. Keldysh, proposed to consider the object M^4 to be the "point" of Minkowski's space. Each such "point" is given the name "elementary event." Each elementary event must correspond to a certain 3D spatial point taken at some particular moment in time. The essence of the theorem of L. Keldysh has applied to the hypothesis of G. Minkowski was as follows: "3D (spatial point) and 1D (point on the time axis) pulper objects can be openly displayed in a compact dimension of 4D. However, the result of the displayed will be a superposition of individual images, and not at all a single 4D object" [18] .

The above contradicts the ability to record and solve the equation of motion of particles and the field equation in 4D form. Each scientific concept has a limit of applicability, and any system of scientific concepts is internally contradictory. The geometry, as a theory of invariants of one or another group of transformations, the space-time of the special theory of relativity (Minkowski flat space) is a four-dimensional real affine space with a metric of a specific singularity. In other words, the STR is the theory of the invariance of the laws of physics in isolated stationary systems, concerning to uniform movements. If we keep in mind the symmetries that would determine uniform rectilinear motions, then we can divide Feynman's point of view: "Symmetry concerning to uniform rectilinear motions leads to the special principle of relativity." In other words, this principle takes place only in the case of rectilinear uniform motion of reference systems. In the case when the movement is accelerated, including when it comes down to uniform rotation, the special principle of relativity ceases to be fair. Einstein's attempts in the general theory of relativity to extend the principle of relativity for any kind of motion of matter turned out to be unsuccessful. The use of GTR by physicists to describe non-invariant, irreversible processes leads to gross errors, in some cases fraught with catastrophe. It was noted experimentally that when the limiting speed of rotation of the rotors of electric motors and turbines is reached, spontaneous acceleration of the disks occurs in a several cases and, moving vertically along the axis of rotation they break from the supports and fly out of the device. A similar accident occurred on August 17, 2009, at the Sayano-Shushenskaya hydroelectric power station. The turbine of the second hydroelectric unit suddenly began to rotate at a hypersonic speed, which led to the destruction of the fixing bolts, the destruction of the room, and the death of 75 people.The excitation of quantum vacuum (dark matter), caused by the accelerated motion of bodies or their rotation, leads in open systems to the violation of the symmetries, conservation laws, and prohibitions in the standard ΛCDM (Λ- Cold Dark Matter) model. This fact must concern into account in classical and quantum mechanics. Each symmetry in the SM corresponds to its own conservation law (the famous Noether's theorem and its subsequent generalizations). For example, symmetries with respect to time shifts (that is, the fact that the laws of physics are the same at every moment) correspond to the law of conservation of energy, symmetries relative to shifts in space correspond to the law of conservation of momentum, and symmetries about rotations in it (all directions in space are equal) - the law of conservation of angular momentum. Conservation laws can also be interpreted as prohibitions: symmetries prohibit changes in the energy, momentum, and angular momentum of a closed system during its evolution. The participation of quantum vacuum (dark matter) in all interactions causes a rejection of the paradigm of the evolution of a closed system it requires a review of all conservation laws and symmetries. J. Wheeler wrote on this subject, "An object that is central to the whole classical general theory of relativity, "four-dimensional space-time geometry" simply does not exist if we go beyond the framework of the classical approximation. This argument shows that the concept of space-time and time are not primary concepts in the structure of Einstein's physical theory. There is no space-time, there is no time; there is nothing before, nothing after. The question is, what happens at the next moment, asking in GRT is meaningless."[19]. Stephen Hawking proposed introducing the imaginary time $\tau = ict$ into the metric of general relativity. If in the Euclidean space the metric has the form $\partial s^2 = \partial x^2 + \partial y^2 + \partial z^2$, then in general relativity the metric has the form $\partial s^2 = c^2\partial t^2 - (\partial x^2 + \partial y^2 + \partial z^2)$ and for imaginary time $c^2\partial t^2$ goes over to $-d^2\tau$. In this case, the differences between time and space in the interval ∂s^2 of the GR metric disappear [20]. This is frozen time. In the standard model, A.Fridmana universe on a large scale can be considered homogeneous and isotropic. Then the metric takes the simple form:

$$\partial s^2 = c^2\partial t^2 - R^2(t)\partial l^2 \qquad (6)$$

Where ∂l^2 is a spatial element, which may correspond to the zero curvature, either positive or negative curvature (spherical or hyperboloid);

R (t) is the radius of the universe, corresponding to the limiting distance achievable for astronomical observations.

The standard model establishes the relationship between the radius of the universe R (t) and the curvature of space on the one hand and an average density of mass - energy, which is denoted σ, and the pressure P.

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Instead of R (t) is often administered to the Hubble function:

$$H = \frac{1}{R}\frac{\partial R}{\partial t} \quad (7)$$

The relationship between P and density σ is determined by the Einstein's equation of state.

Therefore, in the standard model, there are only two independent variables: density function σ and the Hubble H. To define them, you need two equations, which give Einstein's GRT [6]. One of the equations binds Hubble function H with a density of σ; the second equation expresses the adiabatic space evolution of the universe. Adiabatic means that between the environment and the elementary volume in Einstein's General Relativity Theory no heat exchange:

$$\partial Q = 0 \quad (8)$$

In Einstein's General Relativity Theory, irreversible processes are absent, the entropy of the universe remains constant. Herewith, the true cosmic time, included in Newton's Second Law, disappeared from consideration [5]. In the standard cosmological model ΛCDM total energy of the universe is assumed to be zero. It can, therefore, be assumed that H = 0. Therefore, considering the wave function of the universe, from the Schrodinger equation:

$$H\Psi = iH\frac{\partial\Psi}{\partial t} \quad (9)$$

It follows that $\partial\Psi / \partial t = 0$; the wave function does not depend on the time (equation HΨ = 0 equation is often called the Wheeler – DeWitt Equation). This is a paradox. The cosmological time is excluded from consideration in the flat Minkowski space [4].

Why the authors of recent astrophysical discoveries constantly indicate the presence of the cosmic fabric of space-time in the Universe [21, 22]. Today it can be firmly stated that the cosmic fabric of space-time Einstein is made of the same material as the clothes on the naked king in the fairy tale of Danish writer Andersen's "The Naked King." But why do all astrophysicists feel its presence? Indeed, the cosmic space of the Universe is 95% filled with dark matter, which does not emit electromagnetic radiation and does not interact with it directly. This property complicates and possibly even makes direct observation of dark matter impossible. But astrophysicists feel its presence and influence on all processes occurring in the Cosmos with ordinary (baryonic) matter, which in the Universe is about 5%. That is why the cosmic fabric of space-time has taken root in science.

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Plasma & Astrotheology

By Paul T E Cusack

Abstract- How did the Superforce come into play? The answer lies in the plasma. In this paper, we consider the plasma and well-established equations. By these equations, we see that the plasma fits well into the theory of Astrotheology.

Keywords: *plasma; astrtothehogy.*

GJSFR-A Classification: *FOR Code: 010107*

PLASMAASTROTHEOLOGY

Plasma & Astrotheology

Paul T E Cusack

Abstract- How did the Superforce come into play? The answer lies in the plasma. In this paper, we consider the plasma and well-established equations. By these equations, we see that the plasma fits well into the theory of Astrotheology.

Keywords: plasma; astrtothehogy.

I. Introduction

In this paper, we consider some calculations drawn from the well-established theory of plasma making use of Astrotheology parameters already determined. We see that using previously determined parameters, that the plasma fits in to our theory on Astrotheology. In the final analysis, the Superforce is created by the pinch of plasma when a current is passed through it.We begin with the ionization energy of PTFE(Teflon.)

e^-=electron=1.60217733 Coulomb's

90=ionization energy

1.60217733^{90}

=2.6543

=S.F.-0.123

$0.123=1/81=1/c^4$

$e^- +1/c^4$=S.F.

Pressure+ Potential Energy (Mass) = Superforce

Bernoulli's Theorem

$P+mgh +1/2\ \rho\ v^2=\mathbb{C}$

Pressure + P.E. +K.E.=$\mathbb{C}$

Electricity = movement of electrons=K.E.=current=4/3

S.F.=$\mathbb{C}$-K.E.

$2.666=\mathbb{C}-1/2\rho v^2$

$K.E.=1/2\ (127.3)(1/\sqrt{2})^2$

$=0.318=1/\pi$

$8/3=\mathbb{C}-0.318$

$\mathbb{C}=2.984\sim c$

Pressure + P.E. +K.E.=$\mathbb{C}$

P+P.E.+c=$\mathbb{C}$

$E=Mc^2$

$c^2=E/M=1/\ (1/c^2)=9$

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e-mail: St-michael@hotmial.com

c=2.9979

Coulomb Logarithmic Equation

$\text{Ln}\ \Lambda=\text{Ln}\ (aT^{3/2})/\ \sqrt{n_e}$

$=\text{Ln}\ (1 \times 300^{3/2)}/\text{Ln}\ 2.6543$

=1.1427

$\Lambda=0.318=1/\pi$=freq.

Ln 1.1427=1.3333=4/3=s

Bennett:

$I^2=8\pi/\varepsilon_0 \times Nk_B\ T$

$(4/3)^2=8\pi/08.854 \times N\ (1.308)(300)$

N=151.277

151.277 / 1.602117733Coulombs=944.196

944.196-5.11=939.08 ~M p+

Spitzer formula

$\sigma=64\ \sqrt{(2\pi)}\ (\varepsilon_0)^2/[(e_-)\sqrt{(Me-)}][k_BT]^{3/2}/[\text{Ln}\ \Lambda]$

$=64\ (6.28x\ 8.854^2)/\ [(1.602)(\sqrt{0.511})](1.308)(300)/[1.15127]$

=7.01/151.27

=0.4637

V=iR

=(4/3)(0.4637)

=0.618

$=t_0$

Langmuir frequency of electron oscillation

$\omega_{pe}=\sqrt{[(e_o)^2n_e/[\varepsilon_0 \times M\ e-]}$

$=\sqrt{[(1.602)(2.6543/[8.854 \times 9.109]}$

=290656

~291

290656/2

ω=145328

$\sigma=(e_o)^2n_e\tau/Me-$

$=(1.602)^2 63795/0.511$

τ=14469

ω/τ=145328/14469

=09956~1

ω/τ [=] acceleration

$a=\omega/\tau\sim 1.0$

$s= \int\int a=\int a^2/2=2a^3/(2x3)=1/6$

$v=a^2/2=1/2$

v=d/t

t=d/v=1/6/1/2=1/3

$d=vit +1/2at^2$

$=1/2 (1)(1/3)^2$

=0.0555

Circ/=2πR

dC/dt=2π dR/dt

2π(1/6)

dCirc./dt=π/3=60°

Optical Depth

$\tau=\int\kappa\ dx$

$14469=\kappa^2/2$

κ=170.111

170.111reduced by 1/e=0.367879

=62.58

170.111-62.58=107.531

$107.531^7=1.6624\sim 1/6=s=dR/dt$

Magnetic Pressure

$P=B^2/[2\mu]$

$=23537^2/(2\ 0.8854)]$

=0.319

=1/π

=freq.

Magnetic Flux Density

F=QBvsin α

8/3=1.602 (B)(1/√2) sin 90°

B=2.3537

Langevin Equation

ma=q(vX B) + F - mfv

8/3=1.602 (1/√2 x 2.3537 sin 60°)+ 0 + mfv

mfv=23986~24

mf=16958~170=κ

9.109f=1.70111

f=0.18675

E=hf

=6.626(0.18675)

=0.123

=1/81

$=1/c^4$

Eccles' Refractive Index

$n=[1-\omega_{pe}/\omega]$

=√[1-0.291/1]

=√[1-0.291]

=√[0.709]

=0.8420

=sin 57.35

=sin 1

II. The Pinch

The Superforce is generated by the pinch when a current flow through the plasma. The pinch is a pressure that compresses the plasma causing the Superforce.

f=J x B

J=I=4/3

f=(4/3)(23537)sin 1

=1.333 x 2.3537 x 0.8420

=2.642

=2.654

=Pressure

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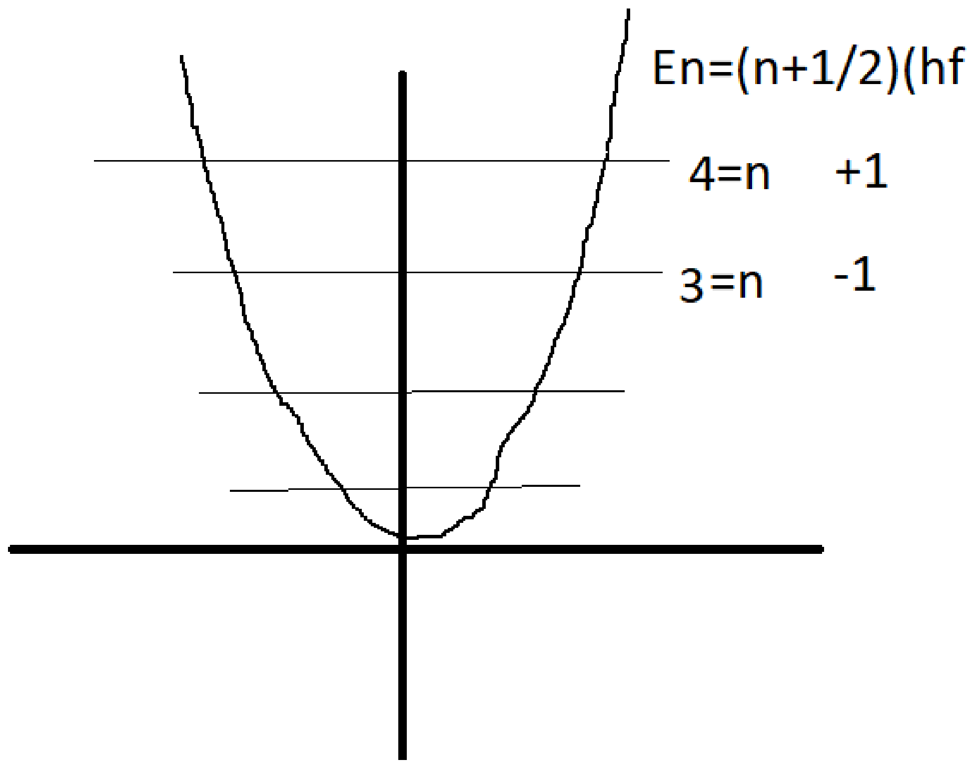

Figure 1: Energy Eigen Values

(4+1/2)((123.7/2Pi - (3+1/2)(123.7/2Pi

=127.3

=density

127.3/0.4233=3.00=c

PV=nRT=freq.

(Ma/A) V=freq.

(100)sin 60° (1/√2)(19905)/0.18675=A

A=6.518

$=G_0$

III. Conclusion

We see that the Astrothoelogy theory fits in well with established formulae in plasma theory.

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j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for Writing a Good Quality Science Frontier Research Paper

Techniques for writing a good quality Science Frontier Research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of science frontier then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- o You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- o Give details of all of your remarks as much as possible, focusing on mechanisms.
- o Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- o One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- o Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

Criterion for Grading a Research Paper (Compilation) by Global Journals

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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Global Journal of Science Frontier Research

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