Dark Matter and Gravitational Waves

The Large Hadron Collider
Detection of a Pack-Photon

Role of Vacuum Polarization
Dark Matter and Gravitational Waves

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<td>Research Scientist, The University of Utah, Geophysics</td>
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<th>Dr. Yaping Ren</th>
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<td>School of Statistics and Mathematics, Yunnan University of Finance and Economics, Kunming 650221, China</td>
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<td>Associate Professor and Range Nutritionist Ph.D. Edinburgh University - Animal Nutrition, M.S. Aberdeen University - Animal Nutrition B.A. University of Dublin-Zoology</td>
<td>Department of Occupational, Safety and Health, College of Public Health, China Medical University, Taiwan Ph.D., in Environmental and Occupational Epidemiology, Department of Epidemiology, Johns Hopkins University, USA Taiwan</td>
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<td>Ph.D in Plant Physiology, Molecular Biology, Biotechnology and Biochemistry, M. Sc. in Plant Physiology, Damascus University, Syria</td>
<td>Irrigation and Water Management, Soil Science, Water Science Hydraulic Engineering, Dept. of Agricultural and Forest Sciences Universita di Palermo, Italy</td>
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<td>Biochemistry Department, Faculty of Veterinary Medicine, Cairo University, Giza, Egypt</td>
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<td>Ph.D. Solid-State Physics, Leningrad Electrotechnical Institute, Russia Institute of Nano and Biotechnologies Aachen University of Applied Sciences, Germany</td>
<td>Ph.D. University of Technology, Sydney, Department of Mathematics, Physics and Electrical Engineering, Northumbria University</td>
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<td>B.Sc.(Manchester), Ph.D.(Brunel), M.Inst.P.(UK) Institute of Mathematical Sciences, University of Malaya, Kuala Lumpur, Malaysia</td>
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<td>Departamento de Ingeniera Matematica, Universidad de Chile. Facultad de Ciencias Fisicas y Matemticas. Blanco Encalada 2120, Piso 4., Chile</td>
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<td>Dr. Bondage Devanand Dhondiram</td>
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Increase Durability of the System "Wheel-Rail"

By Alexander Demyanov, Alexey Demyanov & Boris Pavlitskiy

Don State Technical University

Annotation- Severe working conditions of friction units in the machine-building field lead to rapid wear, and, as a result, reduced performance. The main reason for reducing the reliability of machine components and mechanisms is the lack of a systematic supply of lubricant throughout the entire overhaul cycle, as a result of which the unit works most of the time in conditions of a lack or even complete absence of lubricant.

One of the solutions to the above problem is the development and implementation of adaptive mechanics in friction units without a fundamental design change. This approach will increase the reliability and safety of operation of machine components and mechanisms, as well as simplify the industrial implementation of such systems.

GJSFR-A Classification: FOR Code: 020399
Increase Durability of the System "Wheel-Rail"

Alexander Demyanov \(^a\), Alexey Demyanov \(^b\) & Boris Pavlitskiy \(^b\)

**Annotation** - Severe working conditions of friction units in the machine-building field lead to rapid wear, and, as a result, reduced performance. The main reason for reducing the reliability of machine components and mechanisms is the lack of a systematic supply of lubricant throughout the entire overhaul cycle, as a result of which the unit works most of the time in conditions of a lack or even complete absence of lubricant.

One of the solutions to the above problem is the development and implementation of adaptive mechanics in friction units without a fundamental design change. This approach will increase the reliability and safety of operation of machine components and mechanisms, as well as simplify the industrial implementation of such systems.

I. **Introduction**

In railway transport, wheel flange lubricators of various designs are used, which provide the supply of lubricant to the contact area of the side surface of the rail head with the wheel pair flange, which is a resource and energy-saving technology. The application of the above-described method of lubricating the wheel-rail system on rolling stock reduces the following indicators:

- Wear of the crests of the wheel sets by 2-5 times;
- Wear of the side surface of the rail head by 2-6 times;
- Consumption of diesel fuel and electric power of traction rolling stock up to 15%;
- The probability of the descent of railway rolling stock in the curved sections of the track;
- Level of generated noise.

The wear problem in the wheel-rail system is currently being addressed in two ways:

- Application of wheel sets to flanges, using nozzles or solid lubricant pencils, lubricants;
- Applying grease to the side surface of the rail head.

A study of the systems used and their working conditions showed that due to the complex design of the unit (tank, pump, nozzles, hoses), the comb lubricator is highly likely to fail during operation and there is a risk of lubricant getting onto the raceway (Figure 1).

II. **Decision**

The most promising solution to the problem of improving reliability is the use of adaptive self-organizing systems. The use of these systems will increase one of the main indicators of reliability - durability, which in turn will extend the service life and resource of heavily loaded systems such as wheel-rail [1,2].

The successful solution of the wear problem in the wheel-rail system using adaptive self-organizing systems is confirmed by patented designs [3,4]. For example, (Figure 2), a recess is provided in the flange of the wheel set along its entire perimeter, into which solid lubricant is introduced. During operation, the lubricant will enter the friction zone, covering both the working surface of the flange and the side surface of the rail head and thereby reducing the wear rate [5,6,7].

Let us consider the operation of a wheel using an example of an overhead crane (Figure 3), which implements an adaptive lubricant supply principle, which consists of wheel 1 itself, having blind holes 2 filled with solid lubricant 3, while the diameter of the working surfaces of the wheel is equal to the diameter and depth of the blind holes under the lubricant, respectively.

The depressions formed by the roughness of the working surfaces are filled with lubricant and have a depth \( R_a \). In addition, the working surfaces are separated by a layer of lubricant \( h \), the value of which has a maximum value \( h_{\text{max}} \), characteristic of this type of lubricant, the design of the assembly and the operating mode. Thus, we are talking about the best mode of operation of the unit, in which the friction processes will occur in the lubricating layer, which will ensure the minimum value of the coefficient of friction \( f \) and the intensity of wear \( J \). According to the principle of operation of the proposed wheel design, it is obvious that the formation of a separation lubricating layer, ceteris paribus, is possible only when the volume of lubricant entering the friction zone is greater than the volume formed by the separation lubricating layer and the volume distributed over the microroughness troughs condition:

\[
V_3 = V_2 + V_3.
\]  

(1)

The volume \( V_2 \) will be determined by the height of the separation lubricating layer \( h \) and the contact surface area:

\[
V_2 = \frac{\pi \cdot D^2}{4} \cdot h.
\]  

(2)
In determining the volume \( V_3 \), we will proceed from the following considerations. The total volume \( V_R \) formed by the microroughness of the working surfaces will be greater than the volume \( V_3 \) of the depressions by a certain amount \( S < 1 \), i.e.

\[
V_3 = S \cdot V_R .
\]  

(3)

Given the height of the roughness of both surfaces \( R_a + R_a = 2 \cdot R_a \), the total volume will be equal to:

\[
V_R = \frac{\pi \cdot D^2}{4} \cdot 2 \cdot R_a = \frac{1}{2} \cdot \pi \cdot D^2 \cdot R_a .
\]  

(4)

As a result, the volume of the lubricant layer distributed over the troughs of the microroughness will be:

\[
V_3 = \frac{1}{2} \cdot \pi \cdot D^2 \cdot R_a \cdot S .
\]  

(5)

The amount of released lubricant \( V_1 \) will be determined by the total area \( A_1 \) of the holes and the depth of wear \( U \) for a given period of time \( t \), determined by a certain value:

\[
\frac{dU}{dt} = J .
\]  

(6)

\( J \) - where is the wear rate.

The total area of the holes on the contact surface, if \( n_1 \) - the total number of holes:

\[
A_1 = \frac{\pi \cdot d^2}{4} \cdot n .
\]  

(7)

As a result, the volume of lubricant delivered to the friction zone will be:

\[
V_1 = A_1 \cdot n_1 \cdot U = \frac{\pi \cdot d^2}{4} \cdot n \cdot U .
\]  

(8)

We compose (1) taking into account (2), (5), (8):

\[
\frac{\pi \cdot d^2}{4} \cdot n \cdot U \geq \frac{\pi \cdot D^2}{4} \cdot h + \frac{1}{2} \cdot \pi \cdot D^2 \cdot R_a \cdot S .
\]  

(9)

If simplify and transform the expression:

\[
\frac{d^2}{2} \cdot n \cdot U \geq D^2 \cdot (\frac{1}{2} \cdot h + R_a \cdot S) .
\]  

(10)

As follows from the description of the system's principle of operation, the beginning and end of the release of lubricant is determined by the thickness of the intermediate layer, therefore, for further study of the work cycles, it is necessary to determine its theoretical value depending on other parameters. To do this, we transform expression (10) relatively \( h \), considering the case of equality:

\[
h = \frac{d^2}{D^2} \cdot n \cdot U - 2 \cdot R_a \cdot S > 0
\]  

(11)

In the appendix to the case considered, when \( h = h_{\text{max}} \), wear \( U \) is \( U_o \) equal to some initial value \( U = U_o \), then:

\[
h_{\text{max}} = \frac{d^2}{D^2} \cdot n \cdot U_o - 2 \cdot R_a \cdot S
\]  

(12)

Since at this stage \( \omega = 0 \), then and \( J = 0 \).

The second stage (Figure 4). At the beginning of the wheel's movement \( \omega \neq 0 \), but \( h = h_{\text{max}} \), consequently \( J = 0 \), \( f = f_{\text{min}} \), \( U = U_o \) and the form of equation (11) will not change accordingly.

The third stage (Figure 5). In the process, part of the lubricant is removed from the friction zone and the thickness of the lubricant layer \( h \) is equal to a certain working value \( h = h_i \). In this case, contact of the surfaces is possible and, consequently, wear \( U_i \), the intensity of which \( J_{\text{min}} \) has a minimum value \( J = J_{\text{min}} \), the coefficient of friction \( f_i \) characteristic for this mode \( f = f_i \), and equation (11) will look like this:

\[
h_i = \frac{d^2}{D^2} \cdot n \cdot U_i - 2 \cdot R_a \cdot S
\]  

(13)

The fourth stage (Figure 6). Let the part of the lubricant layer be removed from the friction zone during operation. In this case \( h \), it will fluctuate between zero and minimum values \( 0 \leq h \leq h_{\text{min}} \), the wear rate will reach maximum values \( J = J_{\text{max}} \), as a result of which the wear will spasmodically reach the maximum value \( U = U_{\text{max}} \) and equation (11) will take the form:
\[ h_{min} = \frac{d^2}{D^2} \cdot n \cdot U_{max} - 2 \cdot R_a \cdot S. \]  

(14)

The "excess" of lubricant will fall into the friction zone and normal operation will be established. As a result, equation (14) takes the form of equation (12) and the system reaches the level of the first stage.

III. Conclusion

Thus, the lubricant consumption occurs only when there is contact between the flange of the wheel pair and the side surface of the rail head, and the thickness of the intermediate layer is a parameter that determines the supply of lubricant to the friction zone.

This approach was implemented on bridge cranes of the railway industry enterprise, JSC Zheldorremmash. According to the results of operation, the average resource of the wheels of the bridge crane increased by 1.5 ... 2 times [8].

The proposed approach to solving the problem of wear in the wheel-rail system is relevant for any rail systems.

REFERENCES


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“Halo” of Dark Matter and Gravitational Waves

By Stanislav Konstantinov
Herzen State Pedagogical University

Abstract- In the article I present the last discovery by astrophysicist Vivek Venkatraman Krishnan and others of the rotation of "space-time" together with the white dwarf, and I bring an exhaustive explanation for the absence of a shift in the interference fringes in the Michelson's experiment. The article presents the physical experiments on the detection of dark matter in the near-Earth environment according to the precision data of the AMS-02 detector located on the International Space Station (ISS) and the research by scientists from the Military Space Academy named after A.F. Mozhaisky with the help of satellites of extra sphere formed by halo of dark matter, which rotates together with the planet. The framework of the new cosmological model, which includes superfluid dark energy and dark matter, I suggest revise the Einstein's “vacuum field equation” and based on the experiments of Professor N.A. Kozyrev, associated with the observation of the star Procyon, solve the problem of the type and speed of gravitational waves.

Keywords: dark matter; halo; satellite; gravitational wave.

GJSFR-A Classification: FOR Code: 020105
“Halo” of Dark Matter and Gravitational Waves

Stanislav Konstantinov

Abstract- In the article I present the last discovery by astrophysicist Vivek Venkatraman Krishnan and others of the rotation of “space-time” together with the white dwarf, and I bring an exhaustive explanation for the absence of a shift in the interference fringes in the Michelson’s experiment. The article presents the physical experiments on the detection of dark matter in the near-Earth environment according to the precision data of the AMS-02 detector located on the International Space Station (ISS) and the research by scientists from the Military Space Academy named after A.F. Mozhaisky with the help of satellites of extra sphere formed by halo of dark matter, which rotates together with the planet. The framework of the new cosmological model, which includes superfluid dark energy and dark matter, I suggest revise the Einstein’s “vacuum field equation” and based on the experiments of Professor N.A. Kozyrev, associated with the observation of the star Procyon, solve the problem of the type and speed of gravitational waves.

Keywords: dark matter; halo; satellite; gravitational wave.

I. Introduction

It surprises me that physicists are trying to explain all the new discoveries in astrophysics from the standpoint of Einstein’s general theory of relativity, which is already more than a hundred years old. Based on the latest discoveries of dark energy and dark matter, which make up more than 95% of the energy density of the Universe, I propose in this article a new interpretation of recent astrophysical discoveries the framework of the new cosmological model [1]. The last discovery by astrophysicists of the rotation of space-time around a white dwarf in the PSR J1141-6545 binary star system is interpreted by them as a new proof of the correctness of Einstein’s theory [2] (Fig.1) although been established that the halo of dark matter forms spheres around galaxies, stars and planets that rotate with them (Fig.2).

Figure 1: The illustration of Lense-Thirring frame-dragging resulting from a rotating white dwarf in the PSR J1141-6545 binary star system

Author: Department of Physical Electronics, Herzen State Pedagogical University, Saint Petersburg RSC “Energy”, Russia.
e-mail: konstantinov.s.i@yandex.com
The pulsar is located 10,000 to 25,000 light-years from Earth in the constellation Musca (the fly), which is near the famous Southern Cross constellation. PSR J1141-6545 circles a white dwarf with a mass about the same as the sun's. White dwarfs are the superdense Earth-size cores of dead stars that are left behind after average-size stars have exhausted their fuel and shed their outer layers. The rapidly spinning white dwarf pulls dark matter has caused the pulsar's orbit to change its orientation slowly over time. That prediction is a phenomenon known as frame dragging, or the Lense-Thirring effect. It states that space-time will churn around a massive, rotating body, although, of course, it is not space-time that rotates, but a sphere of dark matter together with a star. Satellite experiments have detected frame dragging in the gravitational field of rotating Earth, but the effect is extraordinarily small and, therefore, has been challenging to measure. Objects with more powerful gravitational fields, such as white dwarfs and neutron stars, offer better chances to see this phenomenon. Study lead author Vivek Venkatraman Krishnan, an astrophysicist at the Max Planck Institute for Radio Astronomy in Bonn, Germany, told that the researchers measured when pulses from the pulsar arrived at Earth to an accuracy within 100 microseconds over a period of nearly 20 years, using the Parkes and UTMOST radio telescopes in Australia. This allowed them to detect a long-term drift. The rapidly spinning white dwarf pulls on space-time has caused the pulsar's orbit to change its orientation slowly over time. The scientists detailed their findings in the journal Science [3,4]. However, their conclusions can be interpreted differently, since the Military Space Academy staff named after are considered A.F. Mozhaisky with the help of satellites were able to discover yet in 1997 in the near-Earth environment an additional sphere formed by dark matter rotates together with the planet. A similar but more powerful sphere of dark matter should exist and around a dead star. The rapid rotation of the white dwarf together with the halo of dark matter caused the pulsar orbit to slowly change its orientation (tilt).

II. Experiments with Artificial Earth Satellites make it Possible to Detect in A Near-Earth Environment an Additional Sphere Formed by Dark Matter Rotating with the Planet

The presence of additional gravitating masses of dark matter in near-Earth space was discovered during experiments with artificial earth satellites equipped with magnetometers. With the help of magnetometers, it was possible to detect moving vortex quantum spinors of dark matter in the near-earth medium having the form of tangential cylinders, with axes parallel to the axis of rotation of the Earth [5]. The velocity of the satellite relative to dark matter was determined from the change the intensity of the magnetic field. The experiments were conducted in the A.F. Mozhaysky Military-Space Academy in the 90s of the 20th century, under the leadership of the Deputy Head of the Academy for Scientific Work, Professor V.Fateev. Head of the Department is Colonel V.L. Groshev published the results of dark matter detection in his book [5]. Academy staff found that in areas of tectonic faults, where there is intense electromagnetic and gravitational energy interaction between the liquid magma of the Earth and the cosmic dark matter, are formed toroidal luminous vortices with sizes ranging from micro particles to tens of meters (rotators, spinors, hadrons) [5]. Such spheres, formed by dark matter, should exist around other planets, stars and galaxies. This discovery allowed researchers to amend the law of universal gravitation of Newton and propose a new formula for calculating time on artificial satellites of the Earth instead of the relativistic Einstein-Lorentz formula. Now when calculating the motion of a spacecraft according to Newton's law of gravitation

$$F = \frac{G M m}{r^2},$$

it is necessary to take into account the additional variable mass of dark matter that forms a sphere around astrophysical bodies. When the spacecraft leaves the planet, the position of the center of gravity of the masses in the planetary system Earth - the sphere will constantly shift in accordance with the flight of the ship due to dark matter [6]:

$$F = G \frac{(M_e + M_d) m}{R^2}$$

where $M_e$ is Earth's mass, $M_d$ is variable mass of dark matter in near-Earth space.
m is spacecraft mass, 
R is distance between the ship and the center of gravity of the system.

Availability of a sphere formed by dark matter near the sun can explain the strange acceleration, marked by American scientists in removing automatic interplanetary station “Pioneer 10” and “Pioneer 11” from the Sun at a distance of more 20 a.e. when solar radiation effects has practically disappeared. Pioneer 10 and 11 were launched in the early 1970s and explored the outer solar system. But in 1980, mission scientists noticed that spacecrafts have unexpectedly drifted off course. Both spaceships experienced a slightly stronger force of attraction to the sun than expected, and since their launch, they have drifted off course by hundreds of thousands kilometer. Coherent radio Doppler data generated by the Deep Space Network with the Pioneer 10 and 11 spacecraft show an anomalous, constant, frequency drift that can be interpreted as an acceleration directed towards the Sun of magnitude (8.74 ± 1.33) x 10^{-10} m s^{-2} at distances between 20 and 70 AU (Anderson et al., Phys. ... Rev. D 65, 082004). But this is not the only problem regarding the trajectories of distant spacecraft. “Galileo”, NEAR (sent to the asteroid Eros), “Rosetta” (to comet Churyumov – Gerasimenko), “Cassini”, “Messenger” (to Mercury) - all of them at different times performed an accelerating maneuver near the Earth, using its gravity, in order to get energy and to accelerate or slow down, and in all experiments the acceleration / deceleration was anomalous, not quite consistent with the indicators of both Newtonian (which is natural) and Einstein’s physics. The Voyager 1 and Voyager 2 spacecraft, which in 2012 gone even further from the Sun than the Pioneers, weren’t a helpful as might have been expected in contributing to the investigation of the Pioneer anomaly because of the way in which they are stabilized. Unlike the Pioneers, which are spin-stabilized, the Voyagers have what is known as three-axis stabilization. This results in a greater uncertainty in the spacecraft's theoretical positions. The uncertainty was great enough to mask any deceleration similar in magnitude to that seen in the Pioneer probes.

The course of time on the satellite depends on the density of dark matter, but density of dark matter itself depends on the gravitational field (potential U) in which the system is located and on the speed of the satellite relative to dark matter. Since the sphere formed by dark matter in the near-Earth space rotates around the Earth together with her, the lag of the clock on the satellite compared to the clock on the earth will depend only on the difference gravitational potentials, that is, from the height of the orbit, since relative to the dark matter at a satellite that moves in the equatorial plane of the Earth, there will be no difference in speed. The duration of time intervals between events on satellites in comparison with the same processes on Earth increases with distance from the Earth, since the gravitational potential decreases and the density of dark matter also decreases. This causes a change in mass and, as a result, entails a change in the time it takes for chemical, nuclear and other processes in the satellite’s orbit. Time does not slow down or accelerate in different reference systems, but simply the speeds of all processes change equally under the influence of a changing gravitational potential, since mass changes [7]. In medicine, there are cases when a person ages quickly due to flaws in genetics, while the metabolic processes in his body proceed at a tremendous speed, and he dies at the age of 20 like a very old man. However, this does not mean that time accelerated its run, the biochemical reactions in the body simply changed. If the satellite is moving perpendicular to the equator, it will have a velocity relative to the dark matter equal to its orbital velocity. This will change the density of dark matter on the satellite and, as a result, the course of time. Thus, the course of time depends not only on the satellite’s height, but also on the angle of inclination of its orbit to the plane of the Earth’s equator that is, from the speed of the satellite relative to dark matter. So, if the period of time measured between events by the clock on the Earth’s surface is Δte, the same of time measured by the clock on the satellite Δts, of determined by the formula [6]:

\[ \Delta t_s = \Delta t_e \sqrt{\frac{1 - \frac{\nu}{c}}{\frac{1}{1 + \left(\frac{U_e - U_s}{c^2}\right)}}} \]  

where: \( \nu \) it orbital velocity of the satellite relative to the Earth;  
\( \alpha \) it angle of inclination of the satellite's orbit to the plane (magnetic) equator of the Earth;  
Ue, Us it the gravitational potentials on the surface of the Earth and the satellite orbit.

The validity of the formula (2) was confirmed in experiments with satellites and the latest high-precision measurements at the international space station. It allowed made it possible to detect using an atomic clock the time dilation at the international space station. At space research command centers there are special time services that monitor the change in the course of time on the satellite and introduce the necessary amendments to coordinate the movement of the clock on the satellite with the clock on Earth. When launching communication satellites, a preliminary adjustment for the acceleration of the clock on satellites by 44,000 nanoseconds per day is provided. The time on the satellite should vary depending on the difference in the gravitational potential and the absolute speed of the satellite relative to dark matter and should not depend on the relative speed of the satellite and the ground observer, as required by the Einstein’s-Lorentz’s formula (3):

\[ \Delta t_s = t_e \left(\frac{\nu_s - \nu_e}{c^2} - \frac{w_s - w_e}{2c^2}\right) \]
where \( U_s, v_s \) - gravitational potential and the velocity related to the satellite;
\( U_e, v_e \) - gravitational potential and the velocity related to ground chronometer.

**III. Non-Gravitational Manifestation of Dark Matter in Near-Earth Space according to the Detector AMS-2**

Alpha-magnetic spectrometer AMS-02 is designed to measure high-energy charged particles with a set of large statistics (an average of 2-3 orders of magnitude more than the "standard" measurements in cosmic rays). The detector AMS-02 was placed on the International Space Station (ISS) and during 2011-2015, it carried out a wide range of studies of cosmic radiation in the near-Earth environment (Figure 3).

![AMS-02 detector at the International Space Station (ISS)](image)

AMS-2 has the largest track magnetic spectrometer (with an area of 6.7 m²), built for space research. Precision measurements of the spectra of electrons and positrons were made in the energy range 0.5-700 GeV for electrons and 0.5-500 GeV for positrons. The employee Massachusetts Institute of the Technology Yu.V. Galaktionov analyzing the results of studies, notes that "neither electronic nor positron spectra can be described by a power law with a single exponent in the entire energy range under study" [8]. Dr. Galaktionov managed to distinguish the presence of a resonance maximum (peak) in the full energy spectrum of secondary electrons and positrons [8, Fig. 16], as well as maxima (peaks) in the energy spectra obtained separately for positrons [8, Fig. 21] and electrons [8, Fig. 22] at energy \( W_p = 15 - 20 \) GeV. According to Dr. Galaktionov himself, "one of the most important goals of the AMS-02 physical research program was to detect dark matter in the near-Earth environment in its non-gravitational manifestations". One of such non-gravitational manifestations could be the resonant generation of secondary electron-positron pairs during polarization of quantum vacuum (dark matter) under the influence of cosmic radiation and relativistic protons [9]. Analysis of the resonance curves shown in [8, Fig. 16, 21, 22] allows to determine the photon frequency corresponding to the natural frequency of the structural element of the space medium (dark matter) and its wavelength. The frequency corresponding to the resonance energy of the photon (\( \nu \)) and the natural frequency of the structural element of the dark matter is defined as the frequency of the Schrodinger and de Broglie wave functions (for resonance, they describe the same probability density) [9]:

\[
\nu = \frac{W}{h} \quad \text{or} \quad \omega = \frac{W}{\hbar} \quad \text{and} \quad \lambda = \frac{2\pi c}{\omega}
\]

where \( W \) - the photon energy, \( \hbar \) - Planck constant \( \hbar = 6.6260 \times 10^{-34} \) J / Hz, \( \hbar = h / (2\pi) \) \( \hbar = 1.0546 \times 10^{-34} \) J / Hz, \( c \) - the speed of light \( c = 299792458 \) m / s

Thus, it is possible to determine the natural frequency of the structural element of the dark matter (quantum vacuum) and wavelength:

\[
W_p \approx 20 \text{ GeV} = 33 \cdot 10^{-18} \text{ J}, \quad \nu_r = 4.7 \cdot 10^{24} \text{ Hz}, \quad \omega_r = 2.82 \cdot 10^{25} \text{ Hz}, \quad \lambda_r = 6.39 \cdot 10^{-17} \text{ m}
\]

**IV. Gravitational Waves**

For the dark energy and dark matter, the generalized vector Lame wave equation is valid. This equation is equivalent to two simpler wave equations, which describe elastic waves of two types: longitudinal waves that propagate with phase velocity \( V_p \) and transverse waves with phase velocity \( V_s \). It can be gravitational, electromagnetic, and torsion waves. The speed of propagation of longitudinal waves is higher than the transverse. Gravitational waves can be attributed to the longitudinal waves since according to...
the calculations of Laplace, their speed should exceed the transverse electromagnetic waves at least 7000000 times. Otherwise, the retarded gravity of the Sun to cease to be strictly central and the planetary system fall apart very quickly due to cyclic torque [10]. In the work “Elastic Model of Physical Vacuum” Professor V.A. Dubrovsky in 1985 presented an estimate of the speed of gravitational waves based on the fact that the ratio of the interaction forces according to the Coulomb law for transverse electromagnetic waves and longitudinal gravitational waves is determined by the ratio of the corresponding elastic modules, which is equivalent to the ratio of their square of velocities. It follows that the speed of gravitational waves exceeds the speed of electromagnetic waves by $10^9$ times [11]. In 1994, when July 16, 1994, the great nucleus of the comet Shoemaker-Levy collided with the Jupiter gas sphere, radial oscillations gave rise to the surface gravity waves, instantly resulted in fluctuations in several geodetic satellite command-measuring complex of Russia. Typically, geodetic satellites have an orbit inside a tube with a diameter of about 1 km. And their orbit control is carried out with very great accuracy - the error in the coordinate is up to a 1 meter, and the error in speed is up to 1 cm/sec. During the collision period, the diameter of the tube path increased by 5–8 times. Unfortunately, the author does not have similar information from the USA from NASA. Speed gravitational waves, formed by the collision of a comet with Jupiter, significantly exceeded the velocity of electromagnetic waves (light spreads from Jupiter to Earth is 43.2 min). Professor from the Pulkovo Observatory N.A. Kozyrev in 1976 in time of his astronomical observations of the star Procyon using a telescope, equipped with a special signalling sensor, found unknown radiation [12]. Herewith the telescope was not focused on a place, which was seemingly emitting visible light, but the place where the star was actually located at that time, taking into account the light speed of light and a direction and speed of the star motion star. A propagation velocity of unknown radiation was significantly higher than the light speed (a signal reaches the earth almost instantly).

Procyon consists of two stars that can be observed without optics. The name of the second star is Gomiza. After assigning Procyon the status of a double star, the main object is defined as Procyon A, the satellite Procyon B (Figure 4). The satellite Procyon B is located at a distance of 4.6 sv. of the year. This is a white dwarf. Procyon is located by galactic standards not far from Earth. Only 11.41 light years from Earth. Procyon shines like 8 of our Suns, its radius is 1.9 from the radius of our Sun. It moves towards the solar system at a speed of 4500 m per second. Procyon refers to the stars subgiants. From the brightness of the glow, we can conclude that the reaction between helium and hydrogen in its bowels no longer occurs and the process of star expansion has already begun. Over time, the Procyon will increase approximately 150 times from its current volume, turn red and become the category of red giants. At the same time, it generates gravitational waves discovered by professor N.A. Kozyrev. In 1976, at the symposium in Byurakan, N.A. Kozyrev reported on his unusual astronomical observations obtained by scanning the celestial sphere with a reflector telescope, closed by a light-tight lid. Unusual sensors were in the focal plane of the telescope: torsion scales and a small thin-film resistor embedded in the arm of a balanced Wheatstone bridge. Kozyrev found that when the telescope is aimed at certain areas of the celestial sphere, the torsion scales pointer deviates from the zero position, and the resistance of the resistor changes. At the time of registration of the signals, the orientation of the telescope did not coincide with the direction of the astronomical object (Procyon) visible in the optical telescope. Kozyrev argued that when observing the vicinity of the Procyon, signals arose in two directions of the telescope [12]. Since gravitational fields are not possible to screen by material bodies, the propagation path of the gravitational waves will differ from electromagnetic waves and they penetrate the telescope, covered by a lid. The first direction, taking into account the correction for the refraction of light in the atmosphere, corresponds to the optical image of the object, i.e. the position of the object at the time of emission reached the observer of the light. The second direction corresponded to the true position of the object, its position at the time generation of superlight radiation of unknown nature. N. Kozyrev recognised the time as a radiation source, as in math aspect he concluded that in the star all the forces were balanced to such an extent that there was just nowhere for power to come from [12]. However today, after the discovery of gravitational waves in September 14, 2015 via LIGO gravitational detectors in the USA, we can argue that this radiation is gravitational waves generated in the process of star expansion Procyon. Thus, Professor N.A. Kozyrev in 1976 discovered gravitational waves emitted during the expansion of the super giant Procyon with the help of his
imperfect detector. Under the influence of gravitational waves, a decrease in the coefficient of elasticity of the suspension of the torsion pendulum was observed, which led to an increase in its period, marked in the fourth digit. The gravitational surge can also significantly change the resistance of the resistor introduced into the sensitive Wheatstone bridge.

Consider the famous “Einstein Field Equation” which governs the behavior of general relativity. The left-hand side describes the curvature of space-time, while the right-hand side describes the distribution of matters [2]:

\[ R_{\mu\nu} - \frac{1}{2} g_{\mu\nu} R = \frac{8\pi G}{c^4} T_{\mu\nu} \]  

(6)

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 is talking about gravitational waves propagating in the free space, which means there is no matter, not even electromagnetic field, consequently the right hand side should be zero. So the equation is simplified to \( R_{\mu\nu} - \frac{1}{2} g_{\mu\nu} R = 0 \), which is equivalent to a more concise form \( R_{\mu\nu} = 0 \), which is also known as “Vacuum Einstein Field Equation”. Both EFE and VEFE are nonlinear partial differential equations, while in the weak field setting, they can be approximated with linear equations. The linear EFE is similar to other wave equations like Maxwell’s Equations, so Einstein predicted the existence of transverse gravitational wave and predicted that the speed of the gravitational waves is equal to speed of light. However, there is no free space in galaxies, there is dark matter there, which is five times more than baryonic matter and the right side of equation (6) cannot be equated to zero [13]. Therefore, 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 [14]. 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.

V. Conclusion

“Do you know that relativism (STR and GRT) is not a true science? - true science necessarily relies on causality and the laws of nature, given to us in physical phenomena (facts). In contrast, SRT and GRT are built on axiomatic postulates, that is, fundamentally unprovable dogmas, which the followers of these teachings are obliged to believe. That is, Einstein’s relativism is a form of religion”. These are the words of Professor Stefan Marinov from the Institute of Fundamental Physics (Graz, Austria), which he said in the article “Experimental violations of the principles of relativity, equivalence and conservation of energy” reflect the state of theoretical physics today.

Here I will cite bring an exhaustive explanation for the absence of a shift in the interference fringes in the Michelson-Morley experiments of 1881-1887 due to the presence of a halo of dark matter (ether) rotating with the Earth.

**Michelson Morley Experiment**

A famous experiment which failed. (?)

*Nobel Prize, 1907*

**Figure 5:** Michelson-Morley experiment

Two equal arms of interferometer have length \( L = 1 \) m.

For moving frame \( t' > t \) for any \( v > 0 \)

For velocity of Earth around Sun \( v = 3 \times 10^4 \) m/s

then \( t' - t = 3 \times 10^{-17} \) s

For \( T = 10^{-15} \) s this is 3% of a fringe shift, and Michelson’s instrument could detect that.

Fringer shift

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“Halo” of Dark Matter and Gravitational Waves
Michelson’s experiment (Fig. 5), was aimed to detect earth’s motion with respect to the fixed ether and it was performed on the surface of the earth. The device Michelson designed, later known as an interferometer, sent a single source of white light through a half silvered mirror that was used to split it into two beams travelling at right angles to one another. After leaving the splitter, the beams travelled out to the ends of long arms where they were reflected back into the middle on small mirrors. They then recombined on the far side of the splitter in an eyepiece, producing a pattern interference fringes. If the Earth is traveling through an ether medium, abeam reflecting back and forth parallel flow ether take longer than beam reflecting perpendicular ether because time gained from traveling downwind less than lost traveling upward, what result be delay in one of light beams that could be detected when beams were recombined through interference. Any slight change spent time would then observed, as shift in positions interference fringes. If a ether were stationary relative the Earth, then would be detected produce shift 4% size single fringe. In Michelson-Morley experiment, the light was repeatedly reflected back and forth along the arms of the interferometer, increasing the path length to 11 m. At this length, the drift would be about 0.4 size single fringe. In both cases, as in all subsequent more accurate experiments, the result was negative, i.e. the absence of a shift in the interference fringes says that there is no ether. But who says the ether would be at rest on the surface of the earth? He can move with the earth like the atmosphere. Observations astrophysicist Vivek Venkatraman Krishnan have proven this January 30, 2020 and buried Einstein’s Special and General Relativity theory. Like the Earth’s atmosphere, the halo of dark matter rotates counterclockwise with the planet — from west to east. Due to rotation, it, like the Earth, takes the form of an ellipsoid, that is, at the equator its thickness is greater than at the poles. A superfluid medium ³He-B simulating dark matter is characterized by internal degrees of freedom, the absence of shear (linear) viscosity and availability rotational viscosity. The effect of involving a halo of dark matter by a rotating planet and the formation of a sphere of dark matter is described in the work of Dr. L. Boldyreva [15]. It has been experimentally established that the radius of the Earth’s gravity is approximately 900000 km. Therefore, the size of the sphere of dark matter should correspond to this value.

In the framework of the new cosmological model, I propose to reconsider Einstein’s “vacuum field equation” and admit that, unlike Einstein’s “geometric” concept, “field” concept of the nature of gravity based on dark matter gives the key to a real understanding of gravity and the nature spheres of dark matter around rotating planets and stars.

### References

Detection of a Pack-Photon: A Theoretical Analysis

By Prince Jessii
Trasker Institute of Scientific Research

Abstract- The Observational prove which will result in the final acceptance of the Theory of Everything is the detection/discovery of a pack photon. In this paper, an analysis on the nature and existence of a pack-photon is described, this includes major characteristics and properties. A clue which will help certain organizations with telescopes/photon detectors at the outer space to detect a pack photon is also explained in this paper.

Keywords: electromagnetic radiation; pack photon; wavelength.

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Detection of a Pack-Photon: A Theoretical Analysis

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Abstract: The Observational prove which will result in the final acceptance of the Theory of Everything is the detection/discovery of a pack photon. In this paper, an analysis on the nature and existence of a pack-photon is described, this includes major characteristics and properties. A clue which will help certain organizations with telescopes/photon detectors at the outer space to detect a pack photon is also explained in this paper.

Keywords: electromagnetic radiation; pack photon; wavelength.

I. Introduction

This paper is an extension of ref [2]. In ref [2], a mathematical test showing that the stretching of spacetime occurred on the line of pressure during cosmic inflation, resulting into a different nature of spacetime inside the planet of mass applying pressure. From the mathematical test, the default nature of spacetime just before cosmic inflation was discovered as $1.50 \times 10^{16}$ without a unit. This mathematical test is the proof of the statement “In an environment where there’s gravity to some extent, the nature of spacetime is free. In an environment where there’s little or no gravity, the nature of spacetime is thick”. Reduction in thickness due to stretching depends on the amount of gravity in that environment. However, this default nature of spacetime led the way straight to dark energy. It proves the reality that indeed dark energy is the energy fluid of spacetime.

Energy doesn’t fade, it exists forever, and it has an attachment (spacetime). For the inferior light to exist forever, it has to be merged with the superior light. The universe was created with an explosion of inferior light scattered to different areas in an environment of the superior light along with spacetime. Both entities were merged, the inferior light became the superior light. However, presently both entities have split, if both entities were still merged, humans will be able to see and observe dark energy and not energy (radiation).

This explanation implies that at some point energy (radiation) took the form of dark energy but presently energy exist on its own in its form. This was what led to the suspicion that some value representing energy (Electromagnetic Radiation) will be a similar value to the one representing dark energy ($4.5 \times 10^{16}$).

Thus, I reviewed the concept of Electromagnetic Radiation and introduced the term “Pack Photons”. Stars are the only bodies that possess the inferior light in full scale. In ref [2], I found the value of the inferior light as $4.5 \times 10^{16}$. This value represents the value of the inferior light as a photon because I got this value with the reduced planck constant ($\hbar$) and speed of light ($c$), this value ($4.5 \times 10^{16}$) along with the charge of an electron ($1.60 \times 10^{-19}$) will give 0.0072, which is also the approximate value of the fine structure constant. This value (0.0072) represents the concept of an electron absorbing a photon. The stars are classical forms of matter that absorbed the inferior light during creation.

Therefore, this value (0.0072) represents a star in quantum state. From my previous papers ref [2,5,6], I’ve been emphasizing on the fact that the value of the energy of a photon from the inferior light is $4.5 \times 10^{16}$. Due to the absorption of this light by the matter part of a star just before it appeared as the form of a star, I also said that the value of a photon energy from the stars (sun) is $4.5 \times 10^{16}$. At the point of creation, because these photons were being possessed by their matter part (electrons), they won’t exist in the form of $4.5 \times 10^{16}$ rather they would exist in the form of 0.0072. However, if the initial form of electromagnetic radiation (inferior light) still exists without being possessed by matter, we can now describe the value of the photon energy as $4.5 \times 10^{16}$. I now present a theoretical analysis on “Pack Photon”. Figure 1 shows an illustration of a star in quantum state.
II. **A Theoretical Analysis on Pack Photon**

This is the exact description of a pack photon in ref [2]. In this concept, as related to the stars, a term called “Pack Photons” is introduced, the reason for this is demonstrated with figure 2.

A pack photon represents the whole energy picture of a star in quantum form. Remember, stars consist of a mixture of all EM rays and can emit photons of different rays but can often emit photons that represents itself. Thus, a pack photon consists of sub-particles of all EM rays. From figure 2, it is seen that the UV photon (purple), Infrared photon (green), X-ray photon (red), Gamma ray photon (yellow), radio wave photon (blue) microwave photon (black) and visible light photon (white) can all find their way to the earth’s surface but there exist a photon that contains all, it is been emitted often, but its complete nature hardly passes the core of the sun.

Electromagnetic waves are characterized by their frequency and wavelengths, this means a gamma ray photon with a frequency can be reduced to a microwave photon or an infrared photon with a new frequency.

A pack photon represents the whole energy picture from a star as photon. Therefore, a pack photon is the highest energy photon from the spectrum. A pack photon which is a mixture of all particles of the spectrum can be reduced to a gamma ray photon, from gamma ray to an x-ray photon, and so on. It is the peak of the Electromagnetic spectrum. Hence, the stars are the only bodies that possess electromagnetic radiation in full scale with all mixtures of the spectrum. Thus, the stars can produce a pack photon.

The inferior light (Electromagnetic Radiation) consists of photons with an energy of $4.5 \times 10^{16}$. The stars (matter) at the point of creation, absorbed the inferior light, the stars now possess the inferior light. The stars in its matter form absorbed the inferior light (Electromagnetic Radiation) to give the picture we now see as the stars.

Each electron absorbed a corresponding photon from the inferior light. Thus, the energy value from each photon from the stars will be $0.0072 (7.2 \times 10^{-3})$.

Just after the point of absorption during creation, the energy value of a photon from the stars will be measured as $0.0072$ but as time passes, a shuffle happens.
The stars produce their energy from nuclear fusion. Using our closest star (Sun), the energy produced by the sun is from nuclear fusion done at its heart (core). The journey of a photon from the sun's core away from its surface to any planet passes through a complicated process. After the creation of stars, all absorbed photons of the inferior light by the electrons are drawn at the core of a star and re-emitted still with an energy value of 0.0072. However, a shuffle happens just outside the core, these photons with an energy of 0.0072 are shuffled by other parts of the sun and re-emitted in lower frequencies. This is what led to the characterization of the rays of the spectrum according to their frequency and wavelength. This concept of shuffle will lead to the term “Reduction of Pack-Photons”.

Figure 3
Gamma ray, x-ray, UV photons etc., are all reduced version of a Pack-Photon. A Pack-Photon is the peak of the spectrum with highest frequency and the lowest wavelength. Figure 3 shows the reduction of a pack photon. UV photon (purple), Infrared photon (green), X-ray photon (red), Gamma ray photon (yellow), radio wave photon (blue) microwave photon (black) and visible light photon (white). A Pack -Photon is the default. It can be reduced to gamma, from gamma to x-ray, from x-ray to UV and so on. The sequence continues, from figure 3, an x-ray photon does not have the gamma piece (yellow) on it. Also, in a UV light photon, the x-ray piece (red) is absent, and so on. The sequence continues up to radio wave. Figure 3 is a modification of figure 2 from ref [2]. Instead of the idea that other photons of the spectrum are emitted on their own rather all photons from the core of the sun are as pack photons but can be absorbed by other parts of the sun and re-emitted in lower frequencies that can find their way to anywhere outside. However, pack-photons are being emitted often at the core of the sun which we can’t see but these pack-photons are only being able to escape to the surface in its complete form, once in a long period (occasionally).

The Electromagnetic spectrum was discovered long ago, the concept of pack photon is just being introduced in this paper(2020). This means, there’s an EM radiation form higher than the normal gamma rays, if it has been observed, observers might just categorize it as a form of gamma ray. A pack-photon might have been seen/observed but described as a gamma ray photon just because gamma rays are the highest currently in the spectrum. Thus, calculations will help differentiate.

III. Mathematical Test

In some of my previous papers, I included the unit for the value $4.5 \times 10^{16}$ as joule (J), in some, I didn’t include a unit. The Physics community will be responsible for the decision of the unit. I’ll just do my calculations without a unit to avoid complications. The value $4.5 \times 10^{16}$ as the energy of a Pack-Photon from the inferior light may not be in joules, it could be in eV or a
Detection of a Pack-Photon: A Theoretical Analysis

unit that doesn’t exist, and we can never prove or measure that value because the inferior light has been absorbed by the stars which are classical forms of matter. The value of a Pack-Photon changes to 0.0072. This value (0.0072) is preferred to be in joules but I proceed to get the frequency and wavelength of a pack-photon.

a) Frequency

The Equation \( E=hf \) is the relationship between the energy of a photon \( E \) with its frequency \( f \). \( h \) is the planck constant.

If the value (0.0072) is assumed to be in joules. The reduced planck constant in joules/sec \( (1.054 \times 10^{-34}) \) is used. The frequency of a pack photon is

\[
f = \frac{E}{h} = \frac{0.0072}{1.054 \times 10^{-34}}
\]

\[
f = 6.83 \times 10^{31} \text{(Hz)}
\]

b) Wavelength

The wavelength \( \lambda \) of a photon is given as \( \lambda = \frac{c}{f} \), where \( c \) is the speed of light \( (3 \times 10^8) \) and \( f \) is the frequency.

Therefore, the wavelength of a pack photon is

\[
\lambda = \frac{3 \times 10^8}{6.83 \times 10^{31}}
\]

\[
\lambda = 4.39 \times 10^{-24} \text{(m)}
\]

If we compare the details of the highest energy (gamma ray) of the spectrum from figure 4 with the details for a pack-photon, it is seen that a pack-photon is higher than a gamma ray.

Figure 4 shows the electromagnetic spectrum; gamma ray has a frequency (Hz) of \( 10^{20} - 10^{24} \) and a wavelength (m) of \( 10^{-16} - 10^{-12} \). A photon higher than a gamma ray photon will have a frequency of \( >10^{24} \) and a wavelength of \( <10^{-16} \). However, from the mathematical test, the frequency of a pack photon is of \( 10^{31} \) which is \( >10^{24} \) and the wavelength is of \( 10^{-24} \) which is \( <10^{-16} \). Thus, the mathematical test/prove is complete and the details for a pack-photon should be the peak of the spectrum. Hence, the spectrum needs an update after an observational prove.

IV. A Clue on Observational Prove

Due to the shuffling that occurs as explained, a pack photon in its complete state or close to its complete state is observed at the surface of a star once in a while (occasionally). I can’t say the exact period it can be emitted but I know all things/process are not perfect, there are days/periods that a pack-photon will be emitted to the surface of the sun in its complete form. However, its almost impossible for a pack-photon to find its way to earth as its complete nature rather its reduced version is seen on earth which are other forms of the spectrum. The pack photons are emitted right from the core of the sun. If it manages to escape shuffling, the closest position to be observed and noticed would be from the position of the sun’s equator. This observation can be done by the help of telescopes, satellites or a photon detector at the outer space. The pack-photon maybe difficult to detect, but its discovery and confirmation of values will lead to the concluding acceptance of the “Theory of Everything”.

Figure 4
V. Conclusion

A pack photon might have been seen/observed and described as a gamma ray photon, but I’ll just give a little gap. Any form of ray with a frequency (Hz) higher than $10^{26}$ should be regarded as a pack-photon i.e a pack photon will have a frequency (Hz) of $10^{26} - 10^{31}$. The help of the organizations with telescopes and satellites or photon detectors at the outer space are needed to prove this concept.

References Références Referencias

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What Caused Australia’s Disastrous Wildfires?

By Maria Kuman
Holistic Research Institute

Introduction- In the journal Physics Today of March 2020, David Cramer published an article on p. 26 with the title: “What Caused Australia’s Disastrous Wildfires? It Is Complicated” [1]. Our title does not have the word “complicated” because we don’t think it is that complicated and we intend to explain not only what caused the wildfires, but to explain also the peculiar asymmetric characteristics of the global warming. Bushfires are common in Australia, but this year the disaster was overwhelming - 11 million hectares burned, which is the size of the Australian state Virginia. Even Sidney suffered unhealthy levels of smoke. 2019 was the hottest and driest year ever recorded. The annual mean temperature was 1.5°C above the average 21.5°C for the years 1961 – 1990. Last year, the Australian average rainfall totaled 277.6 mm, which is way below the record low rainfall of 1902 – 314.5 mm. We will add to this that 2020 is expected to be even hotter and dryer. Why our Earth experiences Global Warming?

GJSFR-A Classification: FOR Code: 240599
What Caused Australia’s Disastrous Wildfires?

Maria Kuman

I. Introduction

In the journal Physics Today of March 2020, David Cramer published an article on p. 26 with the title: “What Caused Australia’s Disastrous Wildfires? It Is Complicated” [1]. Our title does not have the word “complicated” because we don’t think it is that complicated and we intend to explain not only what caused the wildfires, but to explain also the peculiar asymmetric characteristics of the global warming. Bushfires are common in Australia, but this year the disaster was overwhelming - 11 million hectares burned, which is the size of the Australian state Virginia. Even Sidney suffered unhealthy levels of smoke. 2019 was the hottest and driest year ever recorded. The annual mean temperature was 1.50°C above the average 21.50°C for the years 1961 – 1990. Last year, the Australian average rainfall totaled 277.6 mm, which is way below the record low rainfall of 1902 – 314.5 mm. We will add to this that 2020 is expected to be even hotter and dryer. Why our Earth experiences Global Warming?

II. What Caused the Global Warming?

The Sun has many different cycles of activity with different lengths and amplitudes. The shortest cycle of solar activity is with a period of average 11 years and it is not with large amplitude. However, according to study of the glaciers [2, 3], the Sun has a cycle with a period 2,562.5 years with much larger amplitude, whose minimum causes the Ice Ages. According to NASA data, this will happen on December 21, 2020. The author has the proof [4] that at this asymmetric alignment, the sum-up magnetic moments of all seven planets on one side of the Sun will flip the magnetic poles of the Sun. Flipping of the magnetic poles of the Sun means that the Sun will start spinning counterclockwise like an anti-vortex and loosing energy. This will end the cycle of solar activity with periodicity of 2,562.5 years according to study of the glaciers, which means that the asymmetric alignment of seven planets on one side of the Sun on December 21, year 2020, will end the solar activity and the Global Warming on Earth.

III. When the Global Warming Started?

Australia’s Bureau of Meteorology claims that 9 of the country’s hottest years have occurred since 2005 [1]. What happened in 2005 to start the Global Warming and the increased solar activity? In year 2005, 7 planets were aligned on both sides of the Sun in inferior conjunction [4]. It was a great planetary alignment, i.e. it included the big planets Jupiter and Saturn. Five distant planets were aligned on one side of the Sun while the Earth and Moon were on the other side. At such symmetric magnetic perturbation on both sides of the solar equator, the Sun bulges at the equator and its activity increases.

IV. When the Global Warming Will End?

Thus, the global warming was caused by increased solar activity induced by symmetric conjunction of planets on both sides of the Sun (inferior conjunction). The Global Warming will end when seven planets are going to be aligned on one side of the Sun (superior conjunction). According to NASA data, this will happen on December 21, 2020. The author has the proof [4] that at this asymmetric alignment, the sum-up magnetic moments of all seven planets on one side of the Sun will flip the magnetic poles of the Sun.

Flipping of the magnetic poles of the Sun means that the Sun will start spinning in opposite direction, i.e. the Sun will start spinning counterclockwise like an anti-vortex and loosing energy. This will end the cycle of solar activity with periodicity of 2,562.5 years according to study of the glaciers, which means that the asymmetric alignment of seven planets on one side of the Sun on December 21, year 2020, will end the solar activity and the Global Warming on Earth.

V. The Impact of Global Warming on Earth

The flipping of the magnetic poles of the Sun, which means the Sun will change its direction of spinning, could induce flipping of the magnetic poles of the Earth, which means that the Earth may start spinning...
in opposite direction. However, the flipping of the Earth’s magnetic poles is uncertain because while the Sun changes the direction of its spinning regularly as a clock, our Earth changes its direction of spinning very irregularly because the Earth satellites found that our Earth is not a sphere – it is cleft. The author offers explanation in article [7] why the Earth is cleft.

VI. Explaining the Asymmetry of the Impact of Global Warming on Earth

For David Cramer, the author of article [1], it looked too complicated and impossible to understand and explain the asymmetric influence of the global warming on the northern and southern hemispheres of planet Earth. Article [1] claims that one of the factors responsible for the disastrous wildfires in Australia the last year is an event with highly unusual occurrence – breaking of the Antarctic polar vortex, which happened the last year 2019 for the first time. However, the article [1] should say that not the Antarctic vortex, but the Antarctic polar anti-vortex brock the last year 2019. Why?

Russian scientists reported that the diameter of Earth is growing each year, but very unevenly - while more cosmic dust is deposited on the Northern pole, the Southern pole is loosing material. Since vortices suck material and anti-vortices emit material, this means that the Northern pole that sucks material must be vortex, and the Southern pole that looses material must be anti-vortex. Cramer [1] also claims that such events like broken vortex are frequent in the Northern hemisphere, but are very rare in the Southern hemisphere [1]. This asymmetry was completely not understandable for Cramer [1] and we are going to explain it.

In the author’s article [8], it was explained that the Coriolis forces, which cause thrown object to be always deflected to the right in the northern hemisphere and deflected to the left in southern hemisphere cannot be caused by the spinning of the Earth, as Coriolis claimed, because the Earth spins in the same direction in both hemispheres. The deflection to the right in the northern hemisphere means that the northern hemisphere is magnetic vortex because vortices spin clockwise (to the right). The deflection to the left in the southern hemisphere means that the southern hemisphere is magnetic anti-vortex because anti-vortices spin counterclockwise (to the left).

This is in full agreement with what we said for the uneven deposit of cosmic dust on Earth and it means that the Earth’s NEMF is a vortex on top of an anti-vortex. This also explains why water drains clockwise (like a vortex) in the northern hemisphere and counterclockwise (like an anti-vortex) in the southern hemisphere. It also explains why hurricanes and tornados spin clockwise (like a vortex) in the northern hemisphere and counterclockwise (like an anti-vortex) in the southern hemisphere. Now, if the Earth’s NEMF is a vortex on top of an anti-vortex, since vortex and anti-vortex spin in opposite direction they create magnetic fields with opposite polarity. If so, we can think of them as two permanent magnets attracted to one another.

If to one of the stuck-together two permanent magnets of earth we approach a third permanent magnet, which would represent the magnetic influence from the sum-up magnetic moments of aligned planets, we can expect the two magnets to respond differently. If the aligned planets were toward the Northern hemisphere, their influence on the Northern hemisphere would be stronger. I don’t know if this is the case, but since the influence of the aligned planets is stronger on the Northern hemisphere, I can claim with certainty that the planetary alignment should be toward the Northern hemisphere.

VII. Conclusion

Thus, the present article not only explained what caused the disastrous wildfires in Australia, it explained the observed unexplainable asymmetry of the changes related to global warming - stronger in the northern hemisphere than in the southern. But Global Warming has also a positive side. The positive side of Global Warming is explained in the author’s article [9] - the increased magnetic field of the Sun during solar activity stimulates the human brain, which explains our high technological novelties during the Global Warming period.

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The Role of Vacuum Polarization in the Large Hadron Collider

By Stanislav Konstantinov
Herzen State Pedagogical University of Russia

Abstract- The article discusses experimental discoveries recently made at the Large Hadron Collider (LHC) and not received an explanation in the Standard Model. The recognition of the polarization of quantum vacuum (dark matter) under the action of ultra relativistic protons and superpower magnetic and electric fields distorts the spatial patterns in the LHC and allows us to state the presence of the third channel of proton interaction in the LHC, in addition to their mutual collisions.

Keywords: quantum vacuum, dark matter, proton, polarization, resonance, mass, energy.

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The Role of Vacuum Polarization in the Large Hadron Collider

Stanislav Konstantinov

Abstract: The article discusses experimental discoveries recently made at the Large Hadron Collider (LHC) and not received an explanation in the Standard Model. The recognition of the polarization of quantum vacuum (dark matter) under the action of ultra relativistic protons and superpower magnetic and electric fields distorts the spatial patterns in the LHC and allows us to state the presence of the third channel of proton interaction in the LHC, in addition to their mutual collisions.

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I. Introduction

The CMS collaboration in the experiment at the Large Hadron Collider in 2019 for the first time demonstrated a decrease in the t-quark mass with increasing energy [1]. They studied the distribution of reaction products in pp collisions with an energy from 1 TeV to 13 TeV. It was found the decrease in the mass of elementary particles mass obtained from data up to an energy of 13 TeV, as well as a decrease in the magnitude of the interaction constants at a confidence level of 95%, depend on the energy at which measurements are made. This effect, explained by vacuum polarization, was indeed observed in experiments in particular, the decrease of the mass of b and c quarks was measured, as well as the decrease of the strong interaction constant [1]. For the first time, CERN in the article [1] evaluated the role of vacuum polarization in the processes under study at the Large Hadron Collider (Fig.1). In quantum electrodynamics (QED), the instability of vacuum under the influence of relativistic protons in external fields was experimentally established for electric field strengths \( E_s = 1.32 \cdot 10^{16} \text{ V \cdot cm}^{-1} \) (Schwinger’s characteristic quantum electrodynamic field) and magnetic field strength \( H = 10^{16} \text{ T} \), caused by the creation of antiparticle pairs in a vacuum (polarization effect of the vacuum) due to which the vacuum itself becomes unstable.

Figure 1: Large Hadron Collider

With the polarization of vacuum and its transformation into matter, the change in vacuum energy \( w \) can be represented as the sum:

\[
w = w^p + w^e
\]

where \( w^p \) is the vacuum polarization, \( w^e \ll E^2 / 8\pi \); \( w^e \) is the change in the energy of the substance at the production of particles.

The creation of particles is the main reason for the change in the energy of the vacuum. The small value of the reverse reaction \( w^p \) implies the limitation on the electric field strength for a given time \( T \) (\( E_s \approx 10^{16} \text{ V \cdot cm}^{-1} \) is the critical Schwinger’s field) [2].

Thus, the new experiments at the Large Hadron Collider (LHC) contradict the Einstein’s relativistic theory and the Standard Model. Only recognition of quantum
vacuum (dark matter) as the third equal participant in the interaction of elementary particles in the LHC (Fig.1) during its polarization during pp-collisions of relativistic protons allows us to explain, in the framework of the new model [2], a decrease in the mass of elementary particles and a decrease in the interaction constants with an increase in the energy of pp collisions from 1 TeV up to 13 TeV. The study of the vacuum polarization phenomenon and the nature of its quantum structure is an actual problem in modern physics. Ignoring this fact often leads to erroneous interpretation of the experimental data.

II. EFFECTS TO TALK ABOUT THE PRESENCE OF QUANTUM VACUUM (DARK MATTER) IN THE LARGE HADRON COLLIDER

New model represents quantum vacuum (dark matter) as the third full participant of proton collisions in the LHC and whose presence the apologists of the dominant 100 years in the physics of the Einstein's Special Relativity Theory deny [2]. Until recently, it was believed that the use of such an important connection as the unitarity condition (the assertion that the total probability of all elastic and inelastic processes during proton collisions should be equal to unity) allows us to elucidate the spatial picture in the LHC of the proton interaction region and its evolution with a change in energy [3]. However, the results of recent experiments obtained in the LHC, when the proton collision energy reaches 13 TeV, make it possible to doubt the reliability of the unitarity condition when two channels of elastic and inelastic proton collisions are rigidly connected to each other in the probability of particle production events [4]. The recognition of the polarization of quantum vacuum (dark matter) under the action of ultrarelativistic protons and superpower magnetic and electric fields leads to the creation of jets of unstable particles in the LHC and distorts the spatial picture of the proton interaction region adopted in the SM, that is, the third channel is added. Recent discoveries made at the Large Hadron Collider (LHC) include the discovery of the Higgs boson, an increase in the proton interaction cross-section in the energy range \( W_p \sim 10 - 100 \text{ GeV} \), and an increase in the fraction of elastic scattering processes in the energy range \( W_p \sim 100 \text{ GeV} - 13 \text{ TeV} \), which is a consequence of increased proton stability and also the emission of jets in inelastic processes with a large multiplicity [4]. We consider each of these discoveries from the standpoint of the presence of quantum vacuum (dark matter) and its polarization under the influence of relativistic protons.

a) The effect of the stability of relativistic protons with increasing energy of their collision in the Large Hadron Collider (LHC)

The experimental discoveries made recently in the LHC include an increase in the fraction of the processes of elastic scattering of relativistic protons as their collision energy increases, that is, an increase in the proton stability effect. The proton beams collide in the LHC with energies up to 13 TeV in their center of mass system. This energy should exceed the proton's own rest mass by more than four orders of magnitude in magnitude \( (m_p \sim 9380000 \text{ MeV}) \). The main goal of research at the collider is to study the forces that control the interaction of particles and clarify their internal structure. Although there are currently no indications of critical deviations from the predictions of the Standard Model (SM), which combines strong and electroweak interactions, a number of experimental facts that need to be explained are observed. This problem is especially evident in the case of strong interactions in the so-called soft hadronic processes. In particular, it is surprising that as the collision energy of relativistic protons increases, the probability of their integrity increases. Such a picture contradicts the notions of classical physics and goes beyond the framework of the SM. The author of the article [4] professor I.V. Dremin concludes that the probability of the survival of two protons with preservation of their integrity, with increasing collision energy, is related to the purely quantum nature of the structure of hadrons with quarks and gluons located inside. They manifest themselves in inelastic processes in the form of newly born ordinary particles and resonances. It is the dynamics of internal fields in the process of elastic collision of protons that should be responsible for the observed increase in the probability of proton survival with increasing energy. The reason for the increase in the probability of proton survival is not yet clear. However, new discoveries make it necessary to reconsider the nature of the resonances and the mechanism for the production of new particles. After Volker Burkert and his colleagues from the Jefferson laboratory found that the pressure in the proton the pressure could exceed \( 10^5 \) Pascal [5], it would be naive to assume that the maximum energy of the colliding beams of protons achievable in the LHC would be enough to destroy proton.

Figure 2: The structure of the proton, quarks and gluons.
It can be assumed that the creation of particles in this energy range is associated with resonant phenomena in the quantum vacuum (dark matter) and are irrelevant to the integrity of the protons, that is, all collisions the protons in the LHC, except resonances, are elastic. Volker Burkert conducted a series of experiments on the accelerator CEBAF. After the collision of fast electrons with a mass of liquid hydrogen (a source of protons), the researchers registered the particles arising as a result of their interaction - an electron, a proton, and two photons. This allowed for the first time to measure the pressure in the center of the proton, bombarding the proton with electrons whose energy reached 100 MeV or more, which allowed the electron to penetrate into the structure of the proton [5]. Investigations in particle physics at the CEB-1 collider of the Novosibirsk Budker Institute of Nuclear Physics, Siberian Branch of the Russian Academy of Sciences have confirmed the validity that the electron is a point formation in scales up to $4 \times 10^{-14}$ cm. Unlike the proton, it does not have an internal structure [6]. At such a small value, the electrons penetrate into the proton. Then the researchers observed the scattering of the photons, comparing their characteristics with information about the proton and the accelerated electron. This scattering gave the scientists a scheme of energies and pulses that made it possible to describe the extreme pressure in the center of the proton. According to modern views the proton consists of three quarks - two u-quarks (upper quarks from the word up) and one d-quark (the bottom quark from the word down), hence the designation uud. The gluons bind quarks in a single particle (Fig. 2). The maximum repulsion between quarks is observed at a distance of $6 \times 10^{-13}$m, with the pressure reaching $10^{35}$ Pascal. This indicator is considered one of the key characteristics of the proton: colossal pressure is directed from the center outward, counteracting the pressure of the outer regions of the particle directed toward the center [5]. The researchers observed the scattering of photons, comparing their characteristics with information about the proton and the accelerated electron. This scattering gave the scientists a scheme of energies and pulses that made it possible to describe the extreme pressure at the center of the proton.

It can be assumed that the creation of new particles in energy range $W_p \approx 10\text{ - }100 \text{ GeV}$ is associated with the polarization of a quantum vacuum (dark matter) and are irrelevant to the integrity of the protons. The most striking is that the interval of resonant proton energy in the LHC, at which the greatest probability of inelastic collisions of protons and the creation of new particles is observed, corresponds to the energy interval $W_p \approx 10\text{ - }100 \text{ GeV}$ [4, Fig. 2], however, with increasing energy of relativistic protons, the effect of their stability after collision increases, that is, the probability of conservation of the proton as a single particle increases with increasing collision energy [4]. Noteworthy is the fact that in the alpha-magnetic spectrometer AMS-02, the resonance maximum (peaks) of the total energy spectrum of the secondary electrons and positrons [7, Fig. 16], as well as the maxima of the energy spectra obtained separately for positrons [7, Fig.21] and electrons [7, Fig.22] also correspond to the energy interval $W_p \approx 10 \text{ - }100 \text{ GeV}$. Today scientists at the Large Hadron Collider at CERN think that they may have discovered a new particle, the decay of which gives rise to muon pairs in a narrow peak of the energy of colliding protons strictly defined at 28 GeV, but it is too early to draw final conclusions. Among physicists, this particle causes not only excitement but also an alarm. Unlike the Higgs boson, predicted by the theory of elementary particles in the framework of the simplest version of the Standard Model (SM), the new particle can threaten the CM. The new result - consisting of a mysterious bump in the data at 28 GeV - has been published as a preprint on ArXiv and Roger Barlow's article was published as an on November 13, 2018 (Fig. 3) [8].

![Figure 3: New dark matter particle (fifth interaction) in the LHC](image)

(Peak of energy at 28GeV)

The LHC collaborations have very strict internal review procedures, and we can be sure that the authors have done the amounts correctly when they report “4.2 standard deviation value”. This means that the probability of obtaining the peak of this large randomly generated noise in the data, rather than a real particle, is only 0.0013%. In a way, it seems that this should be a real event, not a random noise. If this particle really exists, then it should be outside the standard model, where no one expected it. In most cases, pairs of muons come from different sources from two different events, and not from the decay of a single particle. If you try to calculate the parent mass in such cases, it will spread over a wide range of energies, rather than creating a narrow peak. In the new experiment, the CMS detector detected a large number of pairs of muons...
and, after analyzing their energies and directions, found that these pairs originate from the decay of one parent particle. You can look at Figure 4 and judge for yourself. Is this a real peak or is it just a statistical wobble due to random scatter of points in the background (dashed curve)? If it is real, it means that some of these pairs of muons are really descended from a large maternal particle the dark matter which decayed, emitting muons - and none of these particles have ever been seen before [8]. I should note that the direct experimental determination of the resonance dependence of the production of elementary particles and antiparticles under the action of the frequency $\nu$ of external radiation and relativistic protons in a quantum vacuum (dark matter) is almost completely rejected by modern physics. Following the deceptive logic the modern theory, this dependence is drawn in the form of a monotonously increasing curve, which contradicts the experimental discoveries made recently in the LHC and in near-Earth space using the PAMELA and AMS-2 space spectrometers [9].

b) Higgs boson and the resonant nature of the mass of elementary particles

The discovery in the LHC of heavy Higgs boson resonances (mass 125 GeV), obtained in 2012 with pp collisions at high energies, would seem to confirm the validity the predictions of the Standard Model. The authors of the theoretical works [10] P. Higgs and F. Engler were awarded the Nobel Prize in 2013 for “the theoretical discovery of a mechanism that helps us understand the origin of the masses of subatomic particles and which was recently confirmed by the discovery of a new predicted particle at the Large Hadron Collider.” The situation when theoretical predictions appear before their experimental confirmation and wait for almost half a century of their recognition (the Nobel Prize) is really unique. Everything that is now known about the new particle agrees well with its interpretation of the Higgs boson predicted by the theory of elementary particles within the framework of the simplest version of the SM. Within the framework of the SM, it is possible to calculate both the probability of the Higgs boson production in the pp-collisions in the LHC and thereby its decays, and thereby predict the number of expected events. The estimate of the lifetime of the Higgs boson on the basis of experimental data does not contradict the prediction of the Standard Model and is $T \approx 1.6 \times 10^{25}$ s. The Higgs boson (H) can decay in many different ways: to photons, to heavy W or Z bosons, to quarks or leptons. What is a boson? Each particle has, as it were, an internal moment of rotation, the spin (this is a quantum mechanical phenomenon). There is a whole and half-integral spin in units of Planck's constant. Particles with spin 1/2 or 3/2 (any half-integral spin) are called fermions. In bosons, the spin is an integer, which leads to fundamental differences in the properties of these particles; in the Higgs boson, the spin is 0 (and this is an integer). The Higgs boson is electrically neutral. The Higgs boson, in contrast to all other vector bosons, is a scalar particle. It is believed that the Higgs field fills the entire universe. But the question arises: “interacting with the Higgs field, all the particles acquire mass, but the Higgs boson from this universal mechanism falls out! This is far from trivial; this ambiguity is fundamental and fraught with extremely serious consequences for SM.” In this connection, academic RAS V.A. Rubakov in the article “Higgs Boson” asks the question: “Why do we need a new Higgs field?” and he himself answers: “The short answer is that the symmetries of the theory of elementary particles of the Standard Model forbid elementary particles to have the mass, and a new field breaks these symmetries and ensures the existence the masse of particle” and continues: “In the standard model - the simplest version of the theory (but only in it) - all the properties of the new field and, correspondingly, of the new boson, except for its mass, are unequivocally predicted again on the basis of symmetry considerations” [11]. Thus, the question of the mass of the Higgs boson is generally deduced from the consideration of the SM. Unfortunately, today the standard model does not have a theory capable of calculating the mass of elementary particles, including the mass of the Higgs boson. Physicists working in the frame of this model stipulate that all their predictions are experimentally confirmed. But this perfect (for lack of something better) model cannot predict even the masses of elementary particles, that is why the SM cannot be considered as a final theory of elementary particles. The standard model (SM) even lacks a mass spectrum calculation algorithm for elementary particles. SM does not have theoretically proved algorithm for spectrum mass computation and no ideas how to do it! SM contains from 20 to 60 arbitrary adjustable parameters (there are different versions of SM) for calculating the mass of particles. All these bear strong resemblance to the situation with Ptolemaic models of Solar system before appearance of Kepler’s laws and Newton’s mechanics. These earth-centered models of the planets movement in Solar system had required at first introduction of so called epicycles specially selected for the coordination of theoretical forecasts and observations. L.G.Sapogin’s Unitary Quantum Theory (UQT) allows for calculating the mass spectrum of all hitherto known or hypothetical elementary particles up to the Higgs Boson [12]. And also, a solution of the simple scalar version of UQT basic equation for the wave packet allowed producing a theoretical calculation of the elementary electric charge and the fine structure constant of $\alpha$ particle [13]. According to L. Sapogin's UQT, the particles as clots (wave packets) of a real field is governed by the structure-function and can be decomposed into flat sinusoidal waves by means of
transformations of the Fourier’s series. The structure is here represented as a harmonic amplitude/frequency function (spectral representation). The quantum package becomes classical with increased mass, and quantization the mass in a delicate balance between dispersion and non-linearity. The particle moves according to classical laws of motion, while each packet is governed by quantum laws. L.Sapogin’s Unitary Quantum Theory describes elementary particles as clots (wave packets) of a real-world field to be “identified with the quantum vacuum (dark matter”) In proposed our, model of the creation of particles in a quantum vacuum, including the Higgs boson as a result of pp collisions at high energies in the LHC, the mass of the particles is determined by resonances. The physical meaning of this extremely fast oscillatory process is that after an external action on a quantum vacuum, which is a global field of superposition of oscillators with a frequency continuum, a wave packet appears in it, oscillating like a membrane or a string. The frequency of these free vibrations is very high: it is proportional to the rest energy of the particle and is equal to the frequency of the so-called Schrödinger jitter (”zitter-bewegung”)ωₛ = me²/hγ, γ=√1-v²/c². The calculations show that the envelope wavelength is exactly equal to the de Broglie wavelength, and the dependence of this wavelength on the packet speed is the same! Inside the movement, de Broglie oscillations occur with a frequency ωᵦ=mv²/hγ due to dispersion. At low energies ωₛ >> ωᵦ and the presence of fast natural vibrations, all quantum phenomena that arise as a result of de Broglie oscillations are not affected. In the case when 〈v→c, frequency ωᵦ→ωₛ, γ→0 (resonance frequency ωᵦ), the phenomenon of energy and resonance growth occurs, which leads to an increase in the oscillating amplitude and an increase in the mass of a quantum object mᵢ = hωᵦ/c² [14]. The standard graph of the dependence of the particle’s mass on its speed is now simply half the amplitude-frequency characteristic of the forced oscillations of a harmonic oscillator with no dissipation, and the mass growth is absolute [14].

III. Role of Quantum Vacuum in the Effects of Reducing the Mass of Elementary Particles, as Well as a Decrease in the Magnitude of the Interaction Constants Found at the Large Hadron Collider in the Reaction Products in PP Collisions with Increasing Energy from 1 TEV to 13 TEV

Since the middle of the last century in quantum electrodynamics (QED), the study of the interaction of high-energy particles revealed resonances that appear as peaks against the general background of the relatively monotonic behavior of the cross sections of their interactions. Resonances were interpreted as a consequence of the presence of quantum levels in the particles themselves and identified in SM as newly born unstable particles. Today, all resonances are classified and described in the framework of the standard model up to the Higgs bosons [4]. But the question arises whether it is correct to interpret all resonances only by the particles themselves. As stated above, quantum vacuum (dark matter) is involved in the products of pp collisions. In this case, the non-gravitational manifestation of dark matter (quantum vacuum) during its polarization and resonance production of electron-positron pairs of elementary particles was detected not only in the LHC, but also in the AMS-2 space detector. The employee Massachusetts Institute of the Technology Yu.V. Galaktionov analyzing the results of studies, notes that “neither electronic nor positron spectra can be described by a power law with a single exponent in the entire energy range under study” [7]. It means the presence of a resonance maximum (peak) in the full energy spectrums of secondary electrons and positrons similar to the birth of decay products of dark matter particles during pp collisions in the Large Hadron Collider. According to L. Sapogin’s UQT, the quantum packet becomes a classical particle with an increase in mass and quantization of mass in a delicate balance between dispersion and nonlinearity. In the case when v → c, frequency ωᵦ→ωₛ, γ→0 (resonance frequency ωᵦ), the phenomenon of energy and resonance growth occurs, which leads to an increase in the oscillating amplitude and an increase in the mass in a quantum object [12,14]:

$$mᵢ = h/\omegaᵦ = \frac{hωᵦ}{c²}$$

where mᵢ is mass of a quantum object (particle), ωᵦ is frequency of the wave function of a quantum object or ωᵦ=W/h, W is the particle energy c is the speed of light c = 299792458 m / s h = h / (2π), h = 1,0546 · 10⁻³⁴ J / Hz, h is the Planck’s constant, c = 6,6260 · 10⁻³⁴ J / Hz

It is of interest to consider the process of changing the mass of an elementary particle depending on the growth of energy (its velocity) to the resonance maximum (peak) of the energy spectrum and after it. In the energy range preceding the resonance, the particle mass growth with speed is close to Einstein’s relativistic formula (Fig. 4):

$$mₑ = \frac{mₒ}{\sqrt{1 - v^²/c²}}$$

Where mₒ is rest mass and c is the speed of light.

In the framework of the relativistic concepts of modern electrodynamics, dependence (3) is interpreted
as the effect of the "increase in mass" $m$, of a moving charge to infinity as the speed of charge moves closer to the speed of light. However, an increase in particle mass with velocity occurs for other reasons [14].

In the energy region after resonance, the growth of the mass of an elementary particle stops, and with increasing energy, the mass begins to decrease. This is experimentally established with a probability of 95% at present at the Large Hadron Collider for decay products in pp collisions in the energy range from 1 TeV to 13 TeV.

The effect of a decrease in the constants of fundamental interactions found in the Large Hadron Collider with an increase in the relativistic energy of pp-collisions from 1 TeV to 13 TeV requires additional study, but we can already conclude that it significantly narrow the of the use of magnetic spectrometers in experiments related to measuring the energy spectrum of constant and pulsed beams of ultrarelativistic charged particles and their separation in a constant magnetic field. The reason for this should be sought in the weakening of the interaction between the constant magnetic field of the spectrometer and ultra-relativistic charged particles, which may lead to incorrect conclusions in the process of data processing. As for the non-invariance of the equations of electrodynamics, it is due to the assumption of the reality of the existence of the medium (dark matter) and taking into account the existence of effects of delayed potentials and deformations of the electric field of moving charges. The complete invariance of the equations of electrodynamics is permissible only in an absolutely empty space of Einstein's STR. I wrote about one such mistake, entitled "The Pamela Effect," in an article "The key to the puzzle "Effect PAMELA" published in the January issue of the magazine [9]. The weakening of strong interactions in the nuclei of atoms can lead, in particular, to tunneling effects, and the weakening of gravitational interactions can cause levitation.

IV. Conclusion

Thus, the discovery by the CMS Collaboration in an experiment at the Large Hadron Collider in autumn 2019 of a decrease in the mass of elementary particles, as well as a decrease in the constants of fundamental interactions at a confidence level of 95% when studying the distribution of reaction products in pp collisions with an increase in energy from 1 TeV to 13 TeV, opens scientists have new horizons beyond the Standard Model. On the way to improving the theory of quantum electrodynamics (QED) and quantum chromodynamics (QCD), it is necessary, firstly, to introduce the concept of quantum vacuum (dark matter) into physics, secondly, to abandon the postulates of the special theory of Einstein's relativity and the outdated Bohr principle of "complementarity", and thirdly, to reconsider the resonances in the Large Hadron Collider and go beyond tables to those published by the joint Particle Data Group (PDG). To overcome the crisis in theoretical physics, which was pointed out back in 2014 in his article by physicists of the Large Hadron Collider Joseph Likken and Maria Spiropula "Supersymmetry and the crisis in physics", New Physics is needed [15].

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Why are we having the Pandemic and is it Related to the Global Warming?

By Maria Kuman

Holistic Research Institute

Editorial- I just e-mailed for publication my article “Symbiosis” to the Symbiosis Publishing Group, Journal of Immunology [1]. It is high time for our science to acknowledge that we are not only material body. Our material body lives in symbiosis with nonlinear electromagnetic field (NEMF), which we see as aura (light) and call it Spirit. Symbiosis is co-existence of two entities, which benefit from each other’s presence. Only accepting the fact that we are symbiosis of a material body and NEMF, we can explain our ability to react fast, without which we would be dead long time ago. We respond fast through the fast-running waves of this NEMF [1]. Yes, we are symbiosis of a dark material body and a light Spirit (NEMF).

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Maria Kuman

I. Editorial

I just e-mailed for publication my article “Symbiosis” to the Symbiosis Publishing Group, Journal of Immunology [1]. It is high time for our science to acknowledge that we are not only material body. Our material body lives in symbiosis with nonlinear electromagnetic field (NEMF), which we see as aura (light) and call it Spirit. Symbiosis is co-existence of two entities, which benefit from each other’s presence. Only accepting the fact that we are symbiosis of a material body and NEMF, we can explain our ability to react fast, without which we would be dead long time ago. We respond fast through the fast-running waves of this NEMF [1]. Yes, we are symbiosis of a dark material body and a light Spirit (NEMF).

And this is true for the whole material world. Black Hole of anti-matter created the material world and the nonlinear electromagnetic field (NEMF) that separates the anti-matter of the Black Hole from the matter of the space matrix got imprinted on everything material that the Black Hole created [2]. This makes everything material to be a dark material body and a light NEMF, which explains the fact that each particle is a particle and a wave at the same time [2]. The presence of NEMF in our body also explains our tremendous ability to adapt [3]. The waves of our NEMF scan the environment and send waves to the material body to change to adapt the new environment [3].

The functioning of our organs is subordinated to the Subconscious. It is deliberately done so because in case of danger, when we need to react fast, we don’t want to be bothered with information about the functioning of our organs [4]. The functioning of our organs (and everything else in the body) is ruled and regulated by a Quantum Computer, which works with the waves of our NEMF (Spirit) [5]. The Subconscious is also the place of our emotional brain, which allows our emotions to influence the functioning of our organs. If so, our NEMF through the Quantum Computer rules and regulates everything in the body (including the immune system).

What all this have to do with pandemic and global warming? Yes, it has because if NEMF rules and regulates everything, all living beings will be influenced by external electromagnetic changes. Source of external electromagnetic changes is our Sun, whose activity is ruled by magnetic changes. And the Sun has many different cycles of activity with different lengths and amplitudes. The shortest cycle is with a period of average 11 years and it is not with large amplitude. However, the Sun has a long cycle with a period 2,562.5 years with much larger amplitude, whose minimum causes the Ice Ages. According to study of the glaciers [6, 7], the year 2020 is the maximum of this cycle of solar activity with large amplitude.

On the first place, this maximum of solar activity is what caused the global warming [8] and on the second place this is what caused the pandemic. I need to provide more explanation about the pandemic. Recent studies showed that magnetic changes are at the core of the solar activity [9]. These dramatic magnetic changes during solar activity cause dramatic changes in the Earth’s magnetic field, and everything material being a dark material body and a light NEMF is influenced by it including our immune system. The powerful solar wind of charged particles reaching the earth during solar activity cause mutations in the viruses on Earth and they evolve into new species unknown to our immune system, which does not know how to deal with them. Pandemic is the result of it.

Thus, the pandemic and the global warming go hand in hand. They both result from the increased solar activity during the 2,562.5 years’ cycle, whose maximum is in the year 2020. According to NASA data, on December 21, 2020 seven planets are going to be aligned on one side of the Sun. The author has the proof [5] that at this asymmetric planetary alignment only on one side of the Sun, the sum-up magnetic moments of all seven planets could flip the magnetic poles of the Sun, which means that the Sun will start spinning in opposite (counterclockwise) direction and loose energy, which will end the solar activity and the global warming.

When the Sun start spinning in opposite (counterclockwise) direction, the Earth should also start spinning in opposite direction, but this is uncertain because while the Sun changes the direction of its spinning regularly as a clock, our Earth changes its direction of spinning very irregularly. This is because the Earth satellites found that our Earth is not a sphere – it is cleft. The author offers explanation why the Earth is cleft in [10]. But there is more to the pandemic issue. There was pandemic when the magnetic field of the Sun and its activity was rapidly dropping down before the last
Mini Ice Age in the 14th century [11]. As a response to rapidly changing magnetic field and activity of the Sun, the Earth magnetic field changes rapidly and this seems to weaken our immune system, which is ruled and regulated by our nonlinear electromagnetic field (NEMF).

Thus, the changing magnetic field of the Sun as the planets align and their magnetic moments sum up is expected to lower our immune system and play an additional role in the onset of the pandemic. However, the due alignment of seven planets on one side of the Sun on December 21, 2020 is expected to end the solar activity and the global warming. The planetary alignment on one side of the Sun will also have gravitational effect on Earth. As the planets start aligning on one side of the Sun, their gravitational gradient is expected to influence the Earth core. This explains the already observed increased volcanic activity on Earth. The increased solar activity is expected also to cause a lot of tornadoes and hurricanes. Thus, year 2020 is a year of dramatic changes in all aspects.

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a) A title which should be relevant to the theme of the paper.

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c) Up to 10 keywords that precisely identify the paper’s subject, purpose, and focus.

d) An introduction, giving fundamental background objectives.

e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.

f) Results which should be presented concisely by well-designed tables and figures.

g) Suitable statistical data should also be given.

h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.

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.

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**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 Electronic 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 through 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.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- 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.
- 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?
- 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.
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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.
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<td>Pandemic</td>
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