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(7) Results.
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CONTENTS

COMPARATIVE PHENOLIC, FLAVONOID CONTENTS AND ANTIOXIDANT ACTIVITY OF AQUEOUS METHANOL AND WATER EXTRACTS OF FOUR MEDICINAL PLANTS IN NIGERIA

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ABSTRACT: The comparative antioxidant activities of aqueous methanol and water extracts of *Acalypha wilkesiana, Cnidoscolus aconitifolius, Vernonia amygdalina* and *Solanun scabrum* leaves were studied. The total phenolic content (TPC) was determined using folin-ciocalteu method while total flavonoid content (TFC) was determined using aluminum chloride method. Antioxidant activity was determined using 2, 2-diphenyl-1-picryl hydrazine (DPPH) free radical scavenging and reducing power activity. The result of the study showed that the aqueous methanol extracted more phenols and flavonoids compared to the water extracts of the four plant leaves. More so, the DPPH free radical inhibition of the aqueous methanol extracts was higher than the water extracts of all the plant leaves studied. However, only the aqueous methanol extracts of *A.wilkesiana* and *S.scabrum* showed higher reducing power than their corresponding water extracts while the water extracts of *C.aconitifolius* and *V.amygdalina* leaves showed higher reducing power compared to their corresponding aqueous methanol extracts. In conclusion, this study showed that aqueous methanol has a higher capacity to extract more phenols, flavonoids and increase the free radical scavenging activities of the plant leaves.
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Keywords: medicinal plants, antioxidant activity, phenolic content, flavonoid content, aqueous methanol

1.0. INTRODUCTION

Antioxidants are a group of substances, which inhibit or delay oxidative processes. Most of the potentially harmful effects of oxygen are due to the formation and activity of a number of chemical compounds, known as reactive oxygen species (ROS), which have a tendency to donate oxygen to other substances. Many such reactive species are free radicals and have a surplus of one or more free-floating electrons rather than having matched pairs and are, therefore, unstable and highly reactive. Free radicals produced from oxidation reaction start the chain reaction that damages the cell involved in immune suppression, cell membrane disintegration, membrane protein damage and DNA mutation, which can further initiate the development of many diseases such as cancer, liver injury, cardiovascular diseases, inflammation, diabetes, atherosclerosis etc.

Many antioxidant compounds, naturally occurring from plant sources, have been identified as a free radical or active oxygen scavengers. Phenolic compounds are abundantly present in human diet and acts as antioxidants and are widespread constituents of fruit, vegetables, cereals, olive oil, dry legumes, chocolate and beverages. Also they are found in both edible and non-edible plants. They may exert antioxidant effects as free radical scavengers, as hydrogen donating sources or as singlet oxygen quenchers and metal ion chelators. Phenolic compounds are known to counteract oxidative stress in the human body by helping maintaining a balance between oxidant and antioxidant substances (Attarde *et al*., 2010; Chaulya *et al*., 2010; Laloo and Sahu, 2011; Zheng and Wang, 2001). Although the phenolic, flavonoid contents and antioxidant activities of *Acalypha wilkesiana, Cnidoscolus aconitifolius, Vernonia amygdalina* and *Solanun scabrum* leaves have been reported (Anokwuru *et al*., 2011, 2012), comparative antioxidant activities of their extracts in water and aqueous organic solvent has not been reported and hence the aim of this study.

2.0. MATERIALS AND METHOD

2.1. Plant samples preparation and extraction

Fresh leaves of *Acalypha wilkesiana,* was obtained from Babcock University, Ilishan-Remo,

Ogun State. Fresh leaves of *Cnidoscolus aconitifolius, Vernonia amygdalina* and *Solanun scabrum* were purchased from Ilishan Remo market. The leaves of the four plants were thoroughly rinsed and air dried. They were ground to fine powder and 50 g of each plant sample was soaked in 80% methanol for 72 hours. Another 50g of each plant sample was soaked in water for 72 hours. After the extraction, the supernatants were filtered and all the filtrates concentrated using rotary evaporator at 40°C. The crude extracts were weighed and stored till further use.

2.2.Determination of total phenolic content (TPC)

This was estimated as described by Singleton and Rossi, (1965). The assay is based on the reduction of Folin-Ciocalteu reagent (Phosphomolybdate and phosphotungstate) by the phenolic compounds. The reduced Folin-Ciocalteu reagent is blue and thus detectable with a spectrophotometer at 760nm.

PROCEDURE:

One ml aliquot of extracts (0.1mg/ml) was added in a volumetric flask containing 9 mls of water. One milliliter of Folin-Ciocalteu's reagent was added to the mixture and vortexed. After 5 min, 10 ml of 7% sodium carbonate was added to the mixture, and then incubated for 90 mins at room temperature. After incubation the absorbance against the reagent blank was determined at 750nm. A reagent blank was prepared using distilled water instead of the plant extract. The amount of phenolic compound in the extract was determined as Gallic Acid equivalent (mg/g of dry weight). All samples were analyzed in triplicates.

2.2.Determination of total flavonoid content (TFC)

The TFC was measured following a spectrophotometric method by Dewanto *et al.* (2002). Extract of each plant material (0.1mg/ml) was diluted with water (4 ml) in a 10 ml volumetric flask. Then 5% $NaNO_2$ solution (0.3 ml) was added to each volumetric flask at 5 min, 10% $AlCl_3$ (0.3 ml) was added and at 6 min, 1M NaOH (2 ml) was added. Water (2.4 ml) was then added to the reaction flask and mixed well. Absorbance of the reaction mixture was read at 510 nm. Total Flavonoid Content was determined as Quercetin equivalents (mg/g of dry weight). All samples were analyzed in triplicates.

2.3.ANTIOXIDANT ASSAY
2.3.1.Determination of DPPH radical scavenging activity

A solution of DPPH mixed with that of a substance that can donate a hydrogen atom, gives rise to the reduced form with change in colour, from deep violet to pale yellow.

PROCEDURE:

This was carried out according to the DPPH spectrophotometric method of Mensor *et al.,* 2001. One ml of a 0.3 mM DPPH methanol solution was added to a 2.5ml solution of the extract and allowed to react at room temperature for 30 min. The absorbance of the resulting mixture was measured at 518nm and converted to percentage antioxidant activity (AA%), using the formula:

$$AA\% = \frac{[(Abs_{control} - Abs_{sample}) \times 100]}{Abs_{control}}$$

Methanol (1.0 ml) plus extract solution (2.5 ml) was used as blank. 1 ml of 0.3mM DPPH plus methanol (2.5 ml) was used as the control. This assay was carried out in triplicates for each concentration. The IC_{50} value represented the concentration of the compounds that caused 50% inhibition of radical formation, which was obtained by interpolation from linear regression analysis (Stoilova *et al*., 2007).

2.3.2.Total reducing power

The total reducing power of the extracts were determined according to the procedure of Yen and Duh, (1993) as reported by Premanath and Lakshmidevi, (2010).

Various extracts (20 - 100 µg/ml) were mixed with phosphate buffer (500 µl, 20 mM, pH 6.6) and 1% potassium ferricyanide (500 µl), and incubated at 50^0C for 20 min; 500 µl of 10% Trichloroacetic acid were added, and the mixture was centrifuged at 2500 rpm for 10 min. The supernatant was mixed with distilled water (1.5 ml) and 0.1% ferric chloride (300 µl) and the absorbance was read at 700 nm. The experiment was repeated thrice. Increase in the absorbance of the reactions mixture indicated increase in the reducing power. The extract concentration providing 0.5 of absorbance (IC_{50}) was calculated from the graph of absorbance at 700 nm against extract concentration (Barros *et al*., 2007).

2.4.Statistical Analysis

Data were expressed as mean ± standard error. Analysis of variance was carried out on the values obtained in the experiment. Correlation analysis (Pearson) was carried out to determine the relationship between the assays carried out in this experiment. SPSS 15.0 was used to carry out these analyses.

3.0.RESULTS

3.1.Polyphenolic Content

The result of the phenolic and flavonoid contents of *A. wilkesiana*, *C. aconitifolius S. scabrum* and *V. amygdalina* are shown in table 1. The aqueous (80%) methanol extract gave higher phenolic content which was significantly different ($p<0.05$) from the water extract in all the four plants in this study. Similar trend was also observed in the flavonoid contents of the extracts. For the water extracts, *A.wilkesiana* gave the highest phenolic and flavonoid contents while *S.scabrum* gave the highest phenolic and flavonoid contents in the aqueous methanol extracts.

Table 1: Total Phenolic Contents (mgGAE/g) and Total Flavonoid Content (mgQE/g) *A. wilkesiana*, *C. aconitifolius S. scabrum* and *V. amygdalina*

Plant	Phenol		Flavonoid	
	Water	80% MeOH	Water	80% MeOH
A.wilkesiana	139 ± 1.8^a	204 ± 1.7^b	182 ± 0.3^a	201 ± 0.67^b
C.aconitifolius	75 ± 0.7^c	93 ± 1.5^d	66 ± 0.9^c	114 ± 1.5^d
S.scabrum	104 ± 3.5^e	210 ± 1.2^f	75 ± 0.7^e	253 ± 2.3^f
V.amygdalina	76 ± 1.5^g	117 ± 0.3^h	60 ± 0.7^g	172 ± 0.3^h

Data are expressed as the average of three determinations ± S.E. Data with different lower case letters on each row of each parameter analyzed are significantly different ($p<0.05$).

3.2.Antioxidant Activity

The result of percentage DPPH inhibition of the plants (see table 2) showed that the scavenging capacity of the aqueous methanol extracts for all the plants was higher than the water extracts. *A.wilkesiana* showed the highest scavenging activity in both water and aqueous extracts with IC_{50} values 5.0 and 1.76 µg/ml respectively while *C.aconitifolius* leaves showed the least scavenging activity with IC_{50} values 282.7 and 259.7µg/ml respectively.

The result of the reducing power of the plants (see table 2) showed that the aqueous extracts of *A.wilkesiana* and *S.scabrum* gave higher reducing power compared to their corresponding water extracts while the water extracts of *C.aconitifolius* and *V. amygdalina* gave higher reducing power compared to their corresponding aqueous methanol extracts. *C.aconitifolius* leaf gave the highest reducing power in the water extracts while A.wilkesiana gave the highest reducing power in the aqueous methanol extracts.

Table 2: Antioxidant activities (IC_{50}µg/ml) of *A. wilkesiana*, *C. aconitifolius S. scabrum* and *V. amygdalina* leaves

Plant	DPPH		RP	
	Water	80% MeOH	Water	80% MeOH
A.wilkesiana	5.0 ± 0.3^a	1.76 ± 0.2^a	88.61 ± 1.0^a	3.06 ± 1.2^e
C.aconitifolius	282.7 ± 4.7^b	259.7 ± 0.3^e	51.14 ± 4.7^b	189.4 ± 0.9^f
S.scabrum	142 ± 0.6^c	6.4 ± 0.03^a	127.48 ± 1.2^c	86.1 ± 0.6^a
V.amygdalina	192.3 ± 2^d	87 ± 0.3^f	114.04 ± 0.5^d	144 ± 0.8^g

Data are expressed as the average of three determinations ± S.E. Data with different lower case letters on each row and column of each parameter analyzed are significantly different ($p<0.05$).

Table 3: Correlation coefficients, R, for the relationships between assays

	TFC	DPPH	RP
TPC	0.911^{**}	0.854^{**}	0.515^{*}
TFC		0.844^{**}	0.288
DPPH			0.412^{*}

** Correlation is significant at the 0.01 level, *Correlation is significant at the 0.05 level.

4.0.DISCUSSION

Phenolic compounds are constituent of both edible and non-edible parts of plants (Amarowicz *et al*., 2010). They are widely distributed in plants and are known for their antioxidant and free radical scavenging abilities, which have beneficial implications for human health (Kubola and Siriamornpun, 2008). The higher total phenolic content and total flavonoid content in the aqueous methanol extracts of *A. wilkesiana*, *C. aconitifolius S. scabrum* and *V. amygdalina* leaves showed that the polyphenolics in these plant leaves are best extracted with an aqueous alcoholic solvent compared to the traditional maceration in cold water. It also suggests

that the therapeutic activities of the plants associated with the phenolic contents can best be potentiated with an aqueous organic solvent. This may be the reason why some local concoctions are prepared with alcoholic beverages (like dry gin). The strong correlation (see table 3) between TPC and TFC (r=0.911) showed that aqueous methanol extracts extracted more phenols and flavonoids than the water extracts.

The stable radical DPPH has been used widely for the determination of primary antioxidant activity, that is, the free radical scavenging activities of pure antioxidant compounds, plant, fruit extracts and food materials (Wong *et al*., 2006). The result of the antioxidant activity (see table 2) showed that the aqueous methanol extracts were able to scavenge more of the DPPH free radicals than the water extracts either by donating electrons or hydrogen. There are several reports of strong correlation between phenols and DPPH free radical scavenging activities of plants (Anokwuru *et al*., 2011; Cai *et al*., 2004; Kaur *et al*., 2008; Kubola & siriamornpun, 2008; Loo *et al*., 2007; Tawaha *et al*., 2007; Zheng and Wang, 2004). This study showed a very strong correlation (see table 3) which was statistically significant (p<0.01) between phenols (r=0.854) and inhibition of DPPH free radicals. The correlation between flavonoids and inhibition of DPPH free radicals (r=0.844) was also statistically significant (p<0.01). The scavenging ability of phenols is mainly due to the presence of hydroxyl groups (Subhasree *et al*., 2009). This result showed that the free radical scavenging activity of *A. wilkesiana*, *C. aconitifolius S. scabrum* and *V. amygdalina* leaves is strongly dependents on the non-enzymatic antioxidants present in them.

Compounds with reducing power indicate that they are electron donors and can reduce the oxidized intermediates of lipid peroxidation processes, so that they can act as primary and secondary anti-oxidants (Yen and Chen, 1995). The presence of the reductants in the extracts cause the reduction of the Fe^{2+}/Ferricynanide complex to the ferrous form (Amarowicz *et al.,* 2004). The higher reducing power of the aqueous methanol extracts of *A.wilkesiana* and *S.scabrum* leaves compared to their water extracts showed that the aqueous methanol extracts are better electron donors and can reduce oxidants than their corresponding water extracts. This also suggests that the reductants are more of non polar compounds. However, the higher reducing power of the water extracts of *C.aconitifolius* and *V.amygdalina* leaves showed that the water extracts were better electron donors and could reduce oxidants compared to their corresponding aqueous methanol extracts. It also

suggests that the reductants are more of polar compounds.

The correlation analysis showed a significant (p<0.05) moderate relationship (r=0.515) with TPC, poor relationship with TFC (r=0.288) and weak relationship (r=0.412) with DPPH. The moderate correlation between reducing power and TPC could be as a result of 1:1 of the response of the water and aqueous methanol extracts of the four plant leaves since *A. wilkesiana* and *S.scabrum* showed higher reducing power for their aqueous methanol extracts while *C.aconitifolius* and *V.amygdalina* showed higher reducing power for their water extracts. The poor correlation between TFC and reducing power showed that the flavonoids present in the plants may not be responsible for the reducing power of the plants. The weak correlation between reducing power and DPPH suggests that the compounds responsible for the scavenging activities of the plant leaves may not be responsible for their reducing potentials.

5.0.CONCLUSION

In conclusion, this study showed that aqueous methanol has a higher capacity to extract more phenols, flavonoids and increase the free radical scavenging activities of the plants leaves studied.

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Understanding of Universe, Time, Odds and Environment

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Abstract: The origin of universe, the big bang, modern observations of paradox phenomenon in Phantom Physics and surprisingly accelerated peripheral galaxies① have been the center of confusion in contemporary scientific world. In this paper, a possible cause is discussed base on classic physics. Since the energy in the universe is constant, when the background temperature drops, the heat energy transforms into a different form of energy -- that is momentum. In space, the galaxies are the most significant masses that gather in random movements when their speed drops (due to aging)② and they cannot offset inter-mass attractions or gravities; on a macro level, the mega aggregation of galaxies/matters provide them ever-increasing heavier mass by collecting more aged galaxies/mass/comic ray③along the way. On the other hand, lost matter in the background means lost energy, which means a drop in universe background temperature. Gigantic numbers of regional galaxies/masses will eventually join together and reach a critical mass level or a critical energy level that can be labeled as a blast point, which will trigger a gigantic explosion, similar to our nuclear reaction. The gigantic blast is also known as a big bang that simply bombs everything within to its most primitive state. The blast spits out those most primitive particles, which one day will again form atoms, then molecules -- first inorganic, then organic④. The universe is nothing but an unending cycle of merging and collapsing first-forming a pre-blast mass/energy that triggers a gigantic explosion when the mass/energy reaches a critical blast point. The blast then spits out primitive particles that once again form molecules and then form galaxies/planets. The mother blast also fuels the mass with initial momentum/kinetic energy. When the kinetic/momentum energy declines to certain levels, those galaxies cannot resist the attractions of gravity. They once again merge and collapse, then trigger another explosion; then a new collection of galaxies will be formed, then they age, then merge, collapse and blast again. The big bang/particle explosion is triggered by a certain level (quantifiable) of mass/energy. It cannot be an infinite level of mass/energy. It is another logical call. To express this in a more organized way, I will have to coin a new term for each part of the universal system – Zolaxy, which is created by a single mother blast. The Zolaxy is a family of galaxies created by a single big blast. In other words, the galaxies of any Zolaxy should have the same birth origin/mother bang. In the micro world of sub atom level (Phantom Physics), any unrelated particles/energies existing in experiment environment will greatly alter the experiment results. Since a theoretical space of temperature 0k has never been accomplished in any man-made labs, I am afraid to say that none of those experiments is valid in Phantom Physics. In other words, there is no evidence support quantum mechanics or quantum laws. [Edwin Zong. **Understanding of Universe, Time, Odds and Environment.** *Academ Arena* 2012;4(7):6-11] (ISSN 1553-992X). http://www.sciencepub.net/academia. 2

Keywords: big bang; origin of universe; black matters; particles; time; odds; single bang; numerous bangs; quantum

1. Introduction

Few will argue today that our universe space is infinite in size, and it does have a background temperature, which means energy, according to Einstein's equation where E is energy, m is mass, and c is the speed of light in a vacuum (true void of any known or unknown particles/energy). When E=0, M=0. Energy doesn't exist without matter. Based on observation, the universe is cooling but the peripheral galaxies are speeding up.⑤ where are those kinetic energy from? It has puzzled many scientists. Some scientists may have doubts about big bang because of this paradox observation. During the life cycle of universe, was it just a single big bang that created this current universe some 13 billion years ago? The equally confusion question may also exist- is the big

bang triggered by a certain level of mass/energy reached within or it requires infinite amount of mass/energy? Based on study of sub-atom particles, some extreme physicists now promote a concept of quantum mechanics; they believe "it is possible that something can come out of nothing". This concept has dramatically deviated from classic physics. Are they correct about the nature? Or they are just romantic physics fantasists? The primary objective of this study is to explain some of paradox universe phenomenon in the discipline of classic physics and philosophy.

2. Integration of theoretical physics, math and philosophy

The universe is infinite by definition, not by scientific observation. We invent the word "universe" with a definition that covers all space and matter. If

something else exists outside of the universe, whether it is space or matter, then we need to reject the definition of universe and coin a new word which will include outside space/matter. "The universe is finite" cannot be accepted, because it violates logic. It is a logical consensus that we accept this definition of "universe," which covers everything, both known and unknown. The universe space is infinite in size, and it does have a background temperature, which means energy, according to Einstein's equation where E is energy, m is mass, and c is the speed of light in a vacuum. When E=0, M=0! Energy doesn't exist without matter. Therefore, the matter in universe is infinite as well. Otherwise, you cannot explain how limited matter could fill an unlimited space and give a background temperature of 2.7 K. It is simple logic in mathematic. Look at Einstein's equation again. $E=MC^2$. If temperature exists in every part of the universe, then energy is infinite by definition as well, simply because the space of the universe is infinite by definition. Limited energy/matter cannot disperse in an infinite space. The matter in the universe therefore is defined as infinite by logical reasoning as well. Those matters cannot be increased or decreased, which gives the fact that universal matter is constant, and universal energy is constant correspondingly. Science can never measure infinity because of its inherent deficiency: It is the fact that the physical size of any manmade object/instrument cannot reach infinite. That's where logic/human philosophy is called in to help science. The primitive matter/particles - e.g. cosmic strings, or any particles - existing in the background of the universe are not what we have in our periodic table of elements, which ranges from the lightest element, hydrogen, to super heavy ones, e.g. plutonium. Elements in our periodic table can be changed by adding or removing protons (a process also known as fusion or fission, in nuclear weapons terminology) from the nucleus, along with some electrons.

2.1   Sub-atom Particles

At sub-atom level, the primitive matter/particles are building blocks for nucleus in atoms; after a big bang, some of those sub-nucleus particles remain unengaged in the process of nucleus formation, they remain free and they can be called cosmic strings/ray or wave. Atoms from our periodic table are the building blocks for our molecules, and later on, some of those molecules may be integrated into nonorganic chemical compounds, as well as into their sophisticated sisters, organic compounds. Organic compounds breed organic lives. Those living materials can be resolved back to their organic building blocks through a process of fermentation. Those sophisticated sister compounds can be further broken down to inorganic materials or molecules. Those basic molecules can be even further broken down to their most primitive particles. For Example, leave a steak in the center of active nuclear reactor; you will know what that steak will become. However, we do not have the technology to restore those particles back to a steak. Thus, those primitive sub nuclear particles are certainly created by big bang/mega nuclear or sub nuclear alike explosions. It is a round trip. The big bang explosion is most likely not equal to the nuclear explosions known to humans today. It is more likely a gigantic explosion/big bang of measurable amount of primitive particles that reach critical level first, a direct result of mass merging e.g. gathering of enormous numbers of dying galaxies. At micro level, the influence of environment is much greater on behaviors of sub-atom particles vs. large mass. The absolute void space must be 0k on the scale of absolute temperature.   Without   such   strict environment, none of study results on particles is valid. The irrational conclusions from those invalid studies (e.g. quantum law/mechanics) are nothing but human fantasy. The black hole/black matter is a collection of primitive particles, which is resulted from merging/collapsing/condensing of colossal masses. The black hole doesn't take too much space, because the space and distance existing in nucleus is dramatically eliminated. Black matter is just primitive particles, acting nothing like more advanced-structures e.g. atoms or molecules. However, the black matters or any particles still follow the law of Einstein Equation. In reality, the stealth fighter jet may have a way to avoid detection from radar, but it cannot hide itself from an energy detector since it is mass/energy. Similarly, black hole may have a way to avoid detection from regular telescope, but it cannot hide itself from an energy detector either. The separation of energy from mass or vice versa will violate the Einstein Equation, and it is human fantasy.

2.2   Basic energy form in universe

In universe, there are two basic forms of energy- Kinetic and Potential (any existing energy falls into one of these two). The kinetic energy (e.g. Momentum) prevents stars and planets merge into each other. On the other hand, the potential energy (e.g. gravitational potential) attracts all planets, stars and matters of any form to merge. When planets, stars, galaxies are at their young/mature age, they have enough kinetic energy retrieved from a mother bang keep them away from each other. When time passes on, their kinetic energy decline in space due to traveling a long distance after bang, more and more aging stars/planets/galaxies will not be able to resist gravitation. They start to merge. The more merge they have, the greater the mass become. Those mega

merged mass will crash matters within, feed black matters. Sooner or later, the inactive black hole/or matters will become active black holes due to ever increasing mass/energy within. The process of mega merge will become more and more dramatic or violent when it approaches to another big bang.

2.3 Universe and its cycle

Based on observation, the universe is cooling. The peripheral galaxies are speeding up. Since the energy in the universe is constant, when the background temperature drops, the heat energy transforms into a different form of energy -- that is momentum. The increase of momentum manifests as acceleration of peripheral galaxies. As a matter of fact, both heat and momentum belong to kinetic energy. The next question is: Why will the temperature drop? Based on the characteristics of all matter/materials, they tend to gather together in random movements-micro gravitation (a form of potential energy). In space, the galaxies are the most significant masses that gather in random movements when their speed drops. Their kinetic energy cannot offset inter-mass attractions or gravities. On a micro level, along with the vast distance, the traveling galaxies will also pick up particles/cosmic strings/ray based on the same physics. The mega aggregation of galaxies/matter provides them ever-increasing heavier mass. More mass means more energy, in which some energy manifests in increasing momentum. Some of that energy will be used to condense the matter within-transforming to potential energy, which creates a heavier black hole. A heavier black hole simply means more energy or mass within. The heavier black hole (higher level of potential energy) will turn an inactive black hole to an active black hole (highest level of potential energy). The active black holes will absorb more mass. In the meantime, there are less matter/particles left in the background of the universe after galaxies passing by, which not surprisingly we will see a drop in temperature (losing matter means losing energy). Again, it is based on Einstein's equation -- the matter is energy. Energy, mass, and speed represent three fundamental characteristics of the matter/objects. They are not three separate things. If there is no energy, there will be no speed, and no mass. Similarly, if there is no mass, then no speed and no energy will exist. And if there is no speed, there will be no mass and no energy. Therefore, an absolute temperature of 0K for any space means no movements, but it also tells us that no mass/energy exists in such space-a total void vacuum. Again, lost matter in the background means lost energy, which means a drop in temperature. Also based on the same characteristics of matter/materials conducted in random movements, gigantic numbers of regional galaxies/mass will eventually join together and reach a critical mass level or a critical energy level that can be labeled as a blast point, which means it will trigger a gigantic explosion, similar to our nuclear reaction. The gigantic blast is also known as a big bang that simply bombs everything within to its most primitive state. The blast spits out those most primitive particles, which one day will again form atoms, then molecules -- first inorganic, then organic. The organics will eventually become "alive" when they evolve to have boundaries and are capable of reproducing. As a matter of fact, the living organism will bring orders in random world. For example, the tree turns dirt into a highly organized material form – e.g. tree trunk, barks and leaves. Not surprisingly, organism appreciates everything that is in order. The top organisms/humans appreciate beauty by our nature design as well. What is beauty? The beauty means organized/balanced objects. The higher level of civilization means superior in organizing. A chaotic nation or its army is a weak nation/army. In a competitive world, the more organized civilization will defeat or restore orders in less civilized or chaotic nations/regions. This is designed by nature. It is not a moral call. As we witness in our human history, many civilization have been wiped out by advanced ones. In the universe, some particles may escape the fate of being dragged into molecular structures. Those particles disperse; thus, provide the background temperature in the universe. Some people call them cosmic strings/rays. They are the free-standing loners in the universe. What is gravity? The characteristics of matter tend to gather together in random movements, also known as gravitation (a form of potential energy). When matter/particles reach certain quantities in mass, that mass will become very noticeable (increasing potential energy). The only reason that masses such as planets/moons do not merge is because they revolve with a certain level of speed (kinetic energy) that temporarily offsets the gravity (gravitation potential) - the delicate balance between momentum/kinetic energy and gravitation/potential energy; but eventually they will merge, due to decline of the kinetic energy, which means evolving speed drops as time elapses. Gigantic merged mass will collapse within and crash matters to its primitive state-sub atom particles. The universe is nothing but an unending cycle of merging and collapsing first, which triggers a gigantic explosion eventually when the mass/energy reaches a critical blast point. The blast then spits out primitive particles that once again form molecules first, and then form galaxies/planets. The mother blast also fuels the mass with initial momentum/kinetic energy. When the kinetic/momentum energy declines to certain levels,

those galaxies cannot resist the attractions of gravity. They once again merge and collapse, then trigger another explosion; then a new collection of galaxies will be formed, then they age, then collapse and merge again. It is hard to observe an exact chain reaction of events from point A to point B – for example, turning a big bag of dirt into a pink pig. However, I can assure you of how easy it is to bomb a pink pig back into a bag of dirt. If point A to point B is constructive, then the opposite direction is destructive. Every construction is destined to destruction. On the other hand, each destruction also breeds new construction. It is like the yin and yang of the universe. The micro level of yin and yang of this universe cycle is that the yin characteristics of gathering features of matter/particles in random movement (potential energy), and the yang character of explosion when energy/matter reaches its blast point (kinetic energy).

2.4 Time, Death and Sleep

Time is just a record of history that describes an evolution in process or movement in matter; if you were to stop time, you would get just a snapshot or momentary picture of physics -- a halted progress in matter/energy. The speed of matter/mass or their evolution can never stop; therefore, time will never stop. There is no disappearance of matter/mass/energy; there is only transformation of the engaging or dissembling with external or internal mass/energy. The so-called death in living organisms is really just a halt in the origin of the thinking process. The material will be recycled every bit in nature. The capital punishment is just stopping that particular thinking process; the material body cannot be erased. In terms of stopping the origin of the thinking process, sleep most closely resembles death. The difference is timing. Death means to stop the origin of thinking for good. Maybe one day, our technology will be advanced enough that when patients go to sleep, their damaged or malfunctioning body parts will be replaced by new functional parts or body; then the patient can be awakened with continuity of the original thinking process, even though, in a sense, the patient is already dead, because the original body has gone. The process will be similar to transferring a song from old disc to a new disc. The song is still same song, but carrier is totally different. Death, as we define it today, will have to be re-written.

2.5 Mathematic Odds and Déjà vu

It is all about odds in the universe where math comes to play. From the most primitive particles to the most sophisticated chemical structures, matter will never vanish. It just exists in different forms. The so-called "odds" just describe the chance of matter entering into a particular state. $E=MC^2$. Energy, mass, and speed: these three characteristics describe all materials/matter/particles/cosmic strings or you name it, regardless of its stage in matter evolution. Matter at different speeds not only means different levels of energy within, but also manifests different physical characters. The law applies one stage of matter may not apply the other stage. The never-ending of cycle of evolution in matter/particles happens throughout the universe. Given the infinite size of the universe, the probabilities are most likely infinite as well: "anything is possible." Therefore, at any moment, if you take a snapshot, you can always find materials/particles of same physical state at different places in universe simultaneously, which often gives people a sensation of déjà vu. Similarly, when you look into a large crowd, I am sure some déjà vu is going to happen to your eyes -- two faces will appear to be identical. Some scientists may refer it as a parallel universe or alternative universe. But there is no such thing. There is no parallel universe – if there were, it would violate the definition of "Universe." When you see two exactly identical coins, do you think that two coins are same one or parallel image? Another phenomenon occurs with the speed of light in vacuum. Some scientists feel that one light particle occurs in two different locations at the same time when they reach the speed of light. First of all, such observation is not valid, since no scientist is able to manipulate an environment to a true vacuum. However, I will not be surprise to know that at the speed of light, particles will demonstrate some unique physical character. Environment determines the physical state/character of particles/matter. However, the environment doesn't make matter/mass increase or decrease if no other matter/particles/energy collides into it or loses energy/matter along the way. If the same particle exists in two locations at the same time, that would mean double mass/energy during the pure speed of light in a vacuum (void space from any matter/energy). It means energy/mass can be doubled in the speed of light. If it were true, the energy cannot be constant in our universe. Such a statement simply violates the law that mass/matter will not increase if no foreign mass/matter/energy engages, or mass/matter will decrease if no energy/mass/matter is lost in the process. If mass/energy can be increased or doubled out of nothing in certain environments, then our universe's mass/energy will not be constant. When you see some matter/particles are at same stage of their respective evolution processes, but in different locations of the universe, you just need to remember that identical doesn't necessarily mean they are the same. They may give us an impression of mirror image to each other, but again they are not the same. The light particle some scientist saw in "their

vacuum" appears to exist in two different locations simultaneously; they are actually two different particles. In a "not so pure" vacuum, one particle may very well attract another "foreign" particle pop up in its neighborhood due to its gravitation at micro level - a potential energy that a light particle possesses. In one word, there is no evidence that Einstein Equation is obsolete when it comes to particle world. Time should be simply explained as a history book, a record of chronicled events. Given the sheer number of possibilities in an infinite universe, many of the same events will occur in different parts of the universe. When you look into the universe, you might see the same events in a different part of location, which strikes you a strong sensation of déjà vu. Finally, time is not made of particles; it does not follow the laws of physics. The time machine is another human fantasy.

2.6 Physical Environment is the determination factor along with Odds

Environment determines the physical state of matter/particles. Few will argue that the change of energy within will lead to change of physical characteristics of related matter/particles. How energy changes all depends on the environment where related matter/particles exist. The environment is an energy field with interplay of different matter/particles/mass. There is no place where is totally void of energy in any natural settings. It is very questionable that we humans can ever create a space that is total void of any energy (0K) - a space must also resist any particle penetration. It is a very bad news for particle physicists. The only solution may again require computer simulation. Our entire universe is filled up with energy; it is everywhere. The only way to change the physical state of matter/particles/mass is through manipulating its related environment. Reciprocally, we can observe any state of matter/particles/mass by mimicking a different type of environment, and then watching how matter/particles act in such an environment. The infinite size of universe is formidable for any living organism to physically explore, not to mention the difficulty for any living being to actually evolve intelligently enough to escape the big bang. Future explorations of the universe, I believe, will have to rely on computer simulations. While we create vast numbers of environmental possibilities, then we can see how matter/particles evolve or act in those environments. Hopefully, some of those cyber spaces can be true vacuum. The computer simulations may partially satisfy our ample appetite for knowing the unknown. In other words, computers will compensate for our inherited physical limitations.

3. Results Analysis
3.1.1 Big bangs

During the life cycle of universe, was it just a single big bang that created this current universe some 13 billion years ago? To say this is like saying the entire world's population descended from a single mother. The world population is limited, but the universe is infinite. Let's see a nuclear reaction, the level of blast point is quantified (not infinite), that means there is quantified matter/energy involved, which doesn't need infinite energy or matter engaged to trigger a nuclear reaction. Similarly, the big bang/particle explosion is triggered by a certain level of mass/energy. It cannot be an infinite level of mass/energy. It is another logical call! If an infinite level of mass and energy are required to trigger a big bang, how can a big bang ever happen? We would be stuck in a process of reaching an infinite level of mass/energy forever. I can safely say that infinite means "forever" here. If this were true, there would be no such thing as a big bang. There would be no start of and no end to any cycle of energy/mass evolution, because no big bang would ever be triggered or happen. Other words, each bang may happen as long as a blast point is reached by collecting of measurable mass or galaxies/matter. Therefore, we can safely say that the universe is infinite, but the big bang is not. It involves a certain quantity (enough to trigger a big blast) of mass/energy. The limited quantity, though gigantic in our eye, certainly cannot represent the entire universe (remember, the universe is infinite!); therefore, the entire universe (infinite) cannot be created by a single bang (finite). It is another logical call! At any given time, I can, therefore, safely reason that different parts of the universe are evolving differently. Some parts of the universe may be newborn babies that just had big bangs; some parts of the universe are at a mature stage (e.g. ours); and some parts of the universe are old and dying, which will breed a new big bang. The new big bang may take up matter/particles or cosmic strings from other parts of the universe; therefore, the materials fed into a single big blast may not necessarily be from a single dying part of the universe. There are constant matter exchanges from different regions in the universe, because not all particles/matter will be trapped into molecular structures. Those free loners are the true free spirits in the universe; they may travel far away from their mother bang and enter territories of other mother bang's creation. The fate of those particles/matters is to remain free until they are attracted to nearby passing galaxies.

Those free particles will eventually participate in a big bang somewhere in the universe. That's also why some scientists feel like the matters engaged in this pre-blast bang of current "universe" can be traced to a measurable ball, and there are other "universes"

existing parallel to our universe. Their feelings are correct, in a way. Because each big bang involves a limited amount of matter/particles/energy (a measurable degree of boiling point). The matters/particles have their free loners that travel outside of their mother bang; those free loners have influence on other parts of the universe and provide universe background temperature. Understandably, any new big bang may include dying galaxies from different origins, because they are close enough to be caught in a new pre- big bang mass. To simplify the situation, we can generally state the universe is made of different parts; each part has its own mother bang, though they are interweaved, especially the free mass/matter travel through different regions constantly.

4.   Discussion

In this theoretical study, to put everything in a more organized way, I will have to coin a new term for each part of the universal system – Zolaxy, which is created by a single mother blast. The Zolaxy is a family of galaxies created by a single big blast. In other words, the galaxies within any Zolaxy should have the same birth origin/mother bang. There may be different sizes and different shapes of Zolaxies, just like galaxies. Zolaxies are enormous in their size, and too far for us to see from our Zolaxy. Galaxies are much smaller and much closer, so we are able to observe them. So far, we have observed spiral galaxies (our Milky Way galaxy is a spiral galaxy), elliptical galaxies, and irregular galaxies*. If there are different types of galaxies, then most likely there are different types of Zolaxies. It all depends on the environment and energy/mass involved in that particular blast. Again, the Zolaxy can be categorized as a group of galaxies that have the same birth origin from a single mother bang. A Zolaxy is not the entire universe, just like the Milky Way is not an entire universe. As a matter of fact, our Zolaxy may represent a very tiny fraction of our infinite universe. The universe is infinite; the Zolaxy is limited in its size. The center of the Zolaxy is the origin site of the explosion; the newer galaxies are closer to the center of explosion. The aged galaxies are farther away from blast site. Understandably, travel cost energy; however, the aged galaxies are also picking up matter/particles/cosmic strings along the way as well. From a distance, the galaxies we observe are sped up, because the ones that cover vast distance are exposing, therefore picking up more matter/particles/mass in space. It will manifest as greater momentum. When we watch the distance at the periphery of the universe, the momentum is picking up overall because the universe's background temperature is dropping overall. It means an energy

shift overall at the macro level. At the micro level, the longer distance Galaxies/Masses travel, the more matter /cosmic strings/energy are available to them. Their mass will grow bigger when they travel farther (greater mass does not necessarily mean greater size), harvest the matter/particles from the background. Understandably, it will leave the background energy/matter scarce, though it will never vacuum clean the background space to its total void of energy/matters. Remember, there are always free particles/matters/mass (infinite numbers) floating everywhere in universe. The bigger mass means more energy or greater momentum. When multiple aging galaxies merge and collapsed, this will feed the black hole to its higher level of active physical status; then more free standing matter/particles/energies will be harvested along the way until the gigantic collections of mass occur. When the critical level of mass/energy is reached, then the final big blast is triggered: a mother bang. Unfortunately, no big bang will ever be witnessed, because it is either too far away in distance or too long ago in time, or both. Computer simulations will be the way we explore the furthermost part of the universe in the future.

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A New Universe Model

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Abstract: We suggest a new universe model [1-4]. The universe is infinite, but it has a centre consisting of the tachyonic matter, which operates motion of the entire universe. Therefore the universe is stable. In the sun there is a centre consisting of the tachyonic matter, which operates motion of the sun system. In the earth there is a centre consisting of the tachyonic matter, which operates motion of the earth and the moon. In the moon there is a centre consisting of the tachyonic matter, which operates motion of the moon. In atomic nucleus there is a centre consisting of the tachyonic matter, which operates motion of the nucleus. Therefore atomic nuclei are stable.
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Keywords: Universe; Model; infinite; matter

In the Unvierse there are two stuffs[1-4]: (1) observable subluminal matter called tardyon and (2) unobservable superluminal string matter called tachyons. They coexist in motion. What are tachyons? Historically tachyons are described as particles which travel faster than light. Tachyon as particle with imaginary mass which is wrong. In our theory tachyon is a string which has no rest time and no rest mass. It is unobservable. Tachyons can be converted into tardyons and vice versa. Tardyonic rotating motion produces the centrifugal force but tachyonic string rotating motion produces the centripetal force which is force of gravity. Using the tachyonic string length $\overline{x}_0$ we found the only string theory, other string theories are guesses. Usiing the coexistence principle of tardyons and tchyons we find an equation that changed the universe: $\overline{F} = -mc^2 / R$. We establish the expansion theory of universe without dark matter and dark energy. We unify the gravitational theory and particle theory and explain the behavior of the entire universe from the smallest to the largest scales. In the universe there are no quarks and no Higgs particles. We prove tha Einstein's principles of equivalence is nonexistent. Therefore the general theory of relativity is wrong. In the universe there are no black holes. The geometrization of all physical fields is mathematical guesses which has no physical reality, because they do not consider and understand the tachyonic string theory.

If quantum teleportation, quantum computation and quantum information are action-at-a-distance then they are unobservable.

We calculate Proton and Neutron radii

The Newtonian gravitation formula has the following form .

$$F = -G\frac{M_1 M_2}{R^2} \qquad (1)$$

We assume

$$G = K_0 \rho_1 \rho_2 \qquad (2)$$

Where ρ_1 and ρ_2 denote the densities of both M_1 and M_2 separately. Using the Cavendish experiment we determine K_0. In (2) $G = 6.7 \times 10^{-8}$ cm³/g sec² and the density of lead $\rho_1 = \rho_2 = 11.37 g / cm^3$. From (2) we have

$$K_0 = 5.2 \times 10^{-10} \text{ cm}^9/\text{g}^3 \text{ sec}^2 \qquad (3)$$

Thus, K_0 is new gravitational constant.

By using (2) we determine the proton radius γ_p. From (2) we have

$$\gamma_p = \left(\frac{9K_0 m_p^2}{16\pi^2 G_s} \right)^{1/6} \qquad (4)$$

In the nucleus the strong interaction prevails. We have [5].

$$\frac{\text{strong interaction}}{\text{gravitational interaction}} = \frac{G_s}{G} = 10^{38} \quad (5)$$

where $G_s = 6.7 \times 10^{30}$ cm³/g sec². We know the proton mass $m_p = 1.67 \times 10^{-24}$ g. From (4) we obtain the proton radius

$$\gamma_p = 1.5 \times 10^{-15} \text{ cm} \qquad (6)$$

In the same way we have the neutron radius

$$\gamma_n = 1.5 \times 10^{-15}\,\text{cm} \qquad (7)$$

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7/4/2012

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A New Gravitational Formula: $\overline{F} = -\dfrac{mc^2}{R}$

[一个新的引力公式]

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Abstract: We find a new gravitational formula, establish the expansion theory of the Universe, show that gravitons can be converted into rest mass, prove that Einstein's gravitational mass is greater than inertial mass, derive Newtonian gravitational formula, and prove that tachyon is unobservable.

In the Universe there are two matters: (1) observable subluminal matter called tardyon and (2) unobservable superluminal matter called tachyon which coexist in motion. Tachyon can be converted into tardyon, and *vice versa*. Tardyonic rotating motion produces the centrifugal force, but tachyonic rotating motion produces the centripetal force, that is gravity. In this paper using tardyonic and tachyonic coexistence principle we find a new gravitational formula, establish the expansion theory of the Universe, prove that Einstein's gravitational mass is greater than inertial mass.

We first define two-dimensional space and time ring [1]

$$Z = \begin{pmatrix} ct & x \\ x & ct \end{pmatrix} = ct + jx, \tag{1}$$

where x and t are the tardyonic space and time coordinates, c is light velocity in vacuum, $j = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$.

(1) can be written as Euler form

$$Z = ct_0 e^{j\theta} = ct_0 (\mathrm{ch}\,\theta + j\,\mathrm{sh}\,\theta), \tag{2}$$

where ct_0 is the tardyonic invariance, θ tardyonic hyperbolical angle.

From (1) and (2) we have

$$ct = ct_0 \,\mathrm{ch}\,\theta, \quad x = ct_0 \,\mathrm{sh}\,\theta \tag{3}$$

$$ct_0 = \sqrt{(ct)^2 - x^2}. \tag{4}$$

From (3) we have

$$\theta = \mathrm{th}^{-1} \frac{x}{ct} = \mathrm{th}^{-1} \frac{u}{c}. \tag{5}$$

where $c \geq u$ is the tardyonic velocity.

Using the morphism $j : z \to jz$, we have

$$jz = \overline{x} + jc\overline{t} = \overline{x}_0 e^{j\overline{\theta}} = \overline{x}_0 (\mathrm{ch}\,\overline{\theta} + j\,\mathrm{sh}\,\overline{\theta}), \tag{6}$$

where $\overline{x}$ and $\overline{t}$ are the tachyonic space and time coordinates, $\overline{x}_0$ is tachyonic invariance, $\overline{\theta}$ tachyonic

hyperbolical angle.

From (6) we have

$$\bar{x} = \bar{x}_0 \operatorname{ch} \bar{\theta}, \quad c\bar{t} = \bar{x}_0 \operatorname{sh} \bar{\theta}. \tag{7}$$

$$\bar{x}_0 = \sqrt{(\bar{x})^2 - (c\bar{t})^2} . \tag{8}$$

From (7) we have

$$\bar{\theta} = \operatorname{th}^{-1} \frac{c\bar{t}}{\bar{x}} = \operatorname{th}^{-1} \frac{c}{\bar{u}}. \tag{9}$$

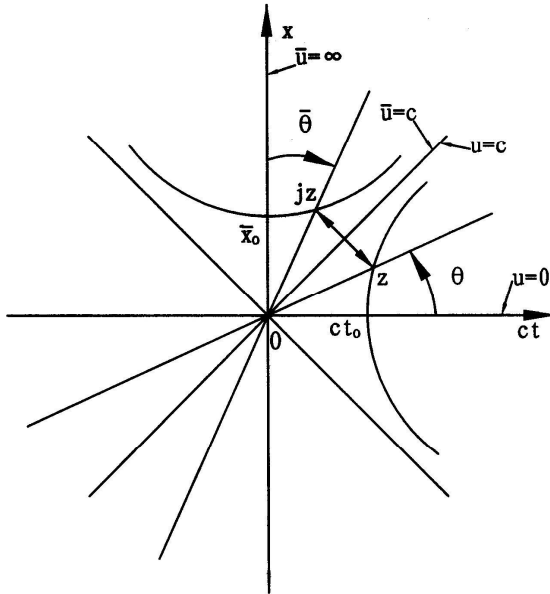where $\bar{u} \geq c$ is the tachyonic velocity.

Fig. 1. Tardyonic and tachyonic coexistence principle

Figure 1 shows the formulas (1)-(9). $j : z \to jz$ is that tardyon can be converted into tachyon, but $j : jz \to z$ is that tachyon can be converted into tardyon. $u = 0 \to u = c$ is the positive acceleration, but $\bar{u} = \infty \to \bar{u} = c$ is the negative acceleration, which coexist. At the $x-$axis we define the tachyonic unit length

$$L_0 = \lim_{\substack{\bar{u} \to \infty \\ t \to 0}} \bar{u} t = \text{constant}. \tag{10}$$

Since at rest the tachyonic time $t = 0$ and $\bar{u} = \infty$, we prove that tachyon is unobservable. Assume $\theta = \bar{\theta}$, from (5) and (9) we get the tardyonic and tachyonic coexistence principle [2-3]

$$u\bar{u} = c^2 . \tag{11}$$

Differentiating (11) by the time, we get

$$\frac{d\bar{u}}{dt} = -\left(\frac{c}{u}\right)^2 \frac{du}{dt}. \tag{12}$$

$\dfrac{du}{dt}$ and $\dfrac{d\bar{u}}{dt}$ can coexist in motion, but their directions are opposite.

We study the tardyonic and tachyonic rotating motions. In 1673 Huygens discovered that the tardyonic rotation produces centripetal acceleration

$$\frac{du}{dt} = \frac{u^2}{R}, \tag{13}$$

where R is rotating radius.

Substituting (13) into (12) we have the tachyonic centrifugal acceleration

$$\frac{d\overline{u}}{dt} = -\frac{c^2}{R}. \qquad (14)$$

(13) and (14) are twin formulas, which have the same form. From (13) we get the tardyonic centrifugal force

$$F = \frac{Mu^2}{R}, \qquad (15)$$

where M is the inertial mass.

From (14) we get the tachyonic centripetal force, that is gravity

$$\overline{F} = -\frac{mc^2}{R}, \qquad (16)$$

where m is the gravitational mass converted into by tachyonic mass $\overline{m}$.

(15) and (16) are twin formulas, which have the same form. (16) is a new gravitational formula.

Now we study the freely falling body. Tachyonic mass $\overline{m}$ can be converted into tardyonic mass m, which acts on the freely falling body and produces the gravitational force

$$\overline{F} = -\frac{mc^2}{R}, \qquad (17)$$

where R is the Earth radius.

We have the equation of motion

$$\frac{mc^2}{R} = Mg, \qquad (18)$$

where g is gravitational acceleration, M is mass of freely falling body.

From (18) we define the gravitational coefficient

$$\eta = \frac{m}{M} = \frac{Rg}{c^2} = 6.9 \times 10^{-10}. \qquad (19)$$

Since the gravitational mass m can be transformed into the rest mass in freely falling body, we define Einstein's gravitational mass $M_g = M_i + m$ and inertial mass $M_i = M$ [4]. We prove

$$M_g > M_i. \qquad (20)$$

Therefore we prove that the principle of equivalence and the universality of free fall are nonexistent.

Using (16) we study the expansion theory of the Universe. Figure 2 shows a expansion model of the Universe. The rotation ω_1 of body A emits tachyonic flow, which forms the tachyonic field. Tachyonic mass $\overline{m}$ acts on body B, which produces its rotation ω_2, revolution u and gravitational force

$$\overline{F}_1 = -\frac{mc^2}{R}, \qquad (21)$$

where R denotes the distance between body A and body B, m is gravitational mass converted into by tachyonic mass $\overline{m}$.

The revolution of the body B around body A produces the centrifugal force

$$F_1 = \frac{M_B u^2}{R}, \qquad (22)$$

where M_B is the inertial mass of body B, u is the orbital velocity of body B.
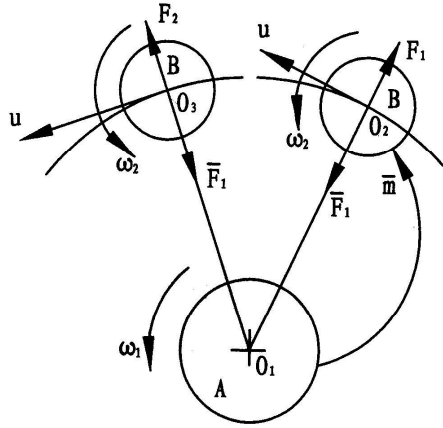
At the O_2 point we assume

Fig. 2. A expansion model of the Universe

$$F_1 + \overline{F_1} = 0 \,. \tag{23}$$

From (21)-(23) we have the gravitational coefficient

$$\eta = \frac{m}{M_B} = \left(\frac{u}{c}\right)^2 . \tag{24}$$

At the O_3 point the tachyonic mass $\overline{m}$ can be converted into the rest mass m in body B, we have

$$F_2 = \frac{M_B u^2}{R} + \frac{m u^2}{R} \,. \tag{25}$$

Since $F_2 + \overline{F_1} > 0$, centrifugal force F_2 is greater than gravitational force $\overline{F_1}$, then the body B expands and its mass increases. This is a expansion mechanism of the Universe. If body A is the Earth, then body B is the Moon; if body A is the Sun, then body B is the Earth; $\cdots$. If the body A is the Sun and body B is the planet. We calculate the gravitational coefficient η as shown in table 1.

Since gravitational mass m can be transformed into the rest mass in body B, we define Einstein's gravitational mass $M_g = M_i + m$ and inertial mass $M_i = M_B$ [4].
We prove

$$M_g > M_i \,. \tag{26}$$

Therefore we prove that the principle of equivalence in the Solar system is nonexistent.

From (21) we derive Newtonian gravitational formula. The m is proportional to M_A, which denotes mass of body A, in (24) m is proportional to M_B, is inversely proportional to the distance R between body A and body B. We have

$$m = k\frac{M_A M_B}{R}, \tag{27}$$

where k is a constant.

Substituting (27) into (21) we have Newtonian gravitational formula [2-3]

$$\overline{F}_1 = -G\frac{M_A M_B}{R^2}, \tag{28}$$

where $G = kc^2$ is a gravitational constant.

We have Einstein's gravitational mass

$$M_g = M_i + m = M_i(1+\eta). \tag{29}$$

Substituting (29) into (28) we have Newtonian generalized gravitational formula

$$\overline{F}_1 = -G\frac{M_A(1+\eta_A)M_B(1+\eta_B)}{R^2}, \tag{30}$$

where η_A and η_B denote gravitational coefficients of body A and body B separately.

Assume ρ_A and ρ_B denote the densities of body A and body B separately. In the same way from (21) we get a unified formula of the gravitational and strong forces[3]

$$\overline{F}_1 = -G_0\frac{\rho_A M_A(1+\eta_A)\rho_B M_B(1+\eta_B)}{R^2} \tag{31}$$

where $G_0 = 5.2\times10^{-10}$ cm⁹/g³ · sec² is a new gravitational constant.

Table 1.

Planet	u (km/sec)	$\eta(10^{-10})$
Mercury	47.89	255.2
Venus	35.03	136.5
Earth	29.79	98.7
Mars	24.13	64.8
Jupiter	13.06	19.0
Saturn	9.64	10.3
Uranus	6.81	5.2
Neptune	5.43	3.3
Pluto	4.74	2.5

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A Simple Mechanism for Gravitation

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Abstract: Gravity is a great mystery. No one has since given any machinery. In this paper we give a simple machinery. Gravity is the tachyon centripetal force. Anybody may understand gravitation. Using the tardyon and tachyon coexistence principle [1] $u\overline{u} = c^2$ （1）, where c is light velocity in vacuum, $u \leq c$ tardyon velocity and $\overline{u} \geq c$ tachyon velocity. We deduce the new gravitation formula: $\overline{F} = -\dfrac{mc^2}{R}$.

Keywords: Simple; Mechanism; Gravitation

Figure 1 shows that the rotation ω of body A emits tachyon mass $\overline{m}$, which forms the tachyon and gravitation field and gives the body B revolutions u and $\overline{u}$.
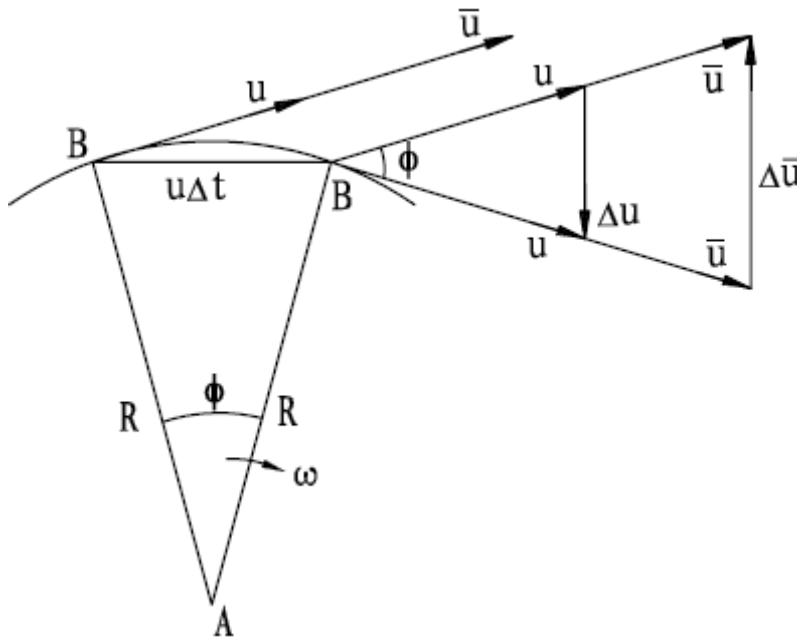

Fig.1. On body B $\dfrac{du}{dt}$ and $\dfrac{d\overline{u}}{dt}$ coexistence [2].

From Fig. 1 it follows

$$\frac{u\Delta t}{R} = \frac{\Delta u}{u} \quad . \tag{2}$$

From (2) it follows the tardyon centripetal acceleration on the body B [2-5],

$$\frac{du}{dt} = \lim_{\substack{\Delta u \to 0 \\ \Delta t \to 0}} \frac{\Delta u}{\Delta t} = \frac{u^2}{R} \,. \qquad (3)$$

From Fig. 1 it follows

$$\frac{u\Delta t}{R} = -\frac{\Delta \bar{u}}{\bar{u}} \,. \qquad (4)$$

From (4) and (1) it follows the tachyon centrifugal acceleration on the body B [2-5],

$$\frac{d\bar{u}}{dt} = \lim_{\substack{\Delta \bar{u} \to 0 \\ \Delta t \to 0}} \frac{\Delta \bar{u}}{\Delta t} = -\frac{u\bar{u}}{R} = -\frac{c^2}{R} \,. \qquad (5)$$

On body B $\dfrac{du}{dt}$ and $\dfrac{d\bar{u}}{dt}$ coexistence.

From (3) it follows the tardyon centrifugal force on body B [2-5],

$$F = \frac{M_B u^2}{R} \,, \qquad (6)$$

where M_B is body B mass.

From (5) it follows the tachyon centripetal force on body B, that is gravity [2-5],

$$\bar{F} = -\frac{mc^2}{R} \,, \qquad (7)$$

where m is the gravitation mass converted into by tachyon mass $\bar{m}$ which is unobservable but m is observable. On body B F and $\bar{F}$ coexistence.
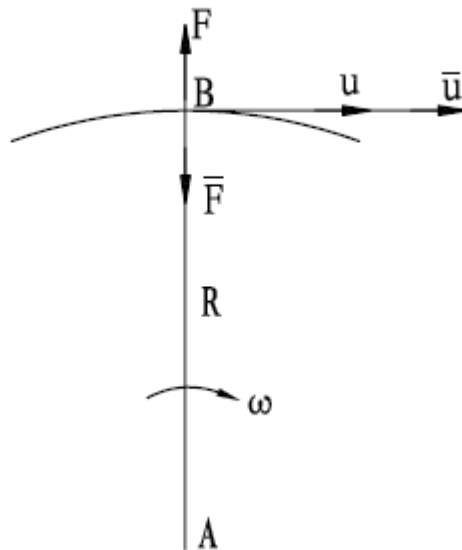

Fig.2. On body B F and $\bar{F}$ coexistence[2].

From Fig. 2, it follows

$$F + \bar{F} = 0 \,. \qquad (8)$$

From (6), (7) and (8) it follows

$$\frac{m}{M_B} = \frac{u^2}{c^2} \,. \qquad (9)$$

Body B increases mass m and centrifugal force is greater than gravitation force, then body B expands

outward. [5]

From (7) it follows Newtonian gravitation formula. The m is proportional to body A mass M_A, in (9) m is proportional to M_B, is inversely proportional to the distance R between body A and body B. It follows

$$m = k\frac{M_A M_B}{R}, \qquad (10)$$

where k is constant

Substituting (10) into (7) it follows the Newtonian gravitation formula [2-5]

$$\overline{F} = -G\frac{M_A M_B}{R^2}, \qquad (11)$$

where $G = kc^2 = 6.673 \times 10^{-8}\ \mathrm{cm}^3/\mathrm{g}\cdot\sec^2$ is gravitation constant.

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[5] Chun-Xuan Jiang, An equation that changed the universe: $F = -mc^2/R$

http://www.wbabin.net/ntham/xuan150.pdf
http://vixra.org/pdf/1007.0018v1.pdf

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Deduce the New Gravitational Formula: $\overline{F} = -\dfrac{mc^2}{R}$

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Abstract: Using two methods we deduce the new gravitational formula, In the Universe there are two matters: (1) observable subluminal matter called tardyon and (2) unobservable superluminal matter called tachyon which coexist in motion. Tachyon can be converted into tardyon, and *vice versa*. Tardyonic rotating motion produces the centrifugal force, but tachyonic rotating motion produces the centripetal force, that is gravity. In this paper using tardyonic and tachyonic coexistence principle we find a new gravitational formula.

We first define two-dimensional space and time ring [1]

$$Z = \begin{pmatrix} ct & x \\ x & ct \end{pmatrix} = ct + jx, \tag{1}$$

where x and t are the tardyonic space and time coordinates, c is light velocity in vacuum, $j = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$.

(1) can be written as Euler form

$$Z = ct_0 e^{j\theta} = ct_0(\operatorname{ch}\theta + j\operatorname{sh}\theta), \tag{2}$$

where ct_0 is the tardyonic invariance, θ tardyonic hyperbolical angle.

From (1) and (2) we have

$$ct = ct_0 \operatorname{ch}\theta, \quad x = ct_0 \operatorname{sh}\theta \tag{3}$$

$$ct_0 = \sqrt{(ct)^2 - x^2}. \tag{4}$$

From (3) we have

$$\theta = \operatorname{th}^{-1}\frac{x}{ct} = \operatorname{th}^{-1}\frac{u}{c}. \tag{5}$$

where $c \geq u$ is the tardyonic velocity.

Using the morphism $j : z \to jz$, we have

$$jz = \overline{x} + jc\overline{t} = \overline{x}_0 e^{j\overline{\theta}} = \overline{x}_0(\operatorname{ch}\overline{\theta} + j\operatorname{sh}\overline{\theta}), \tag{6}$$

where $\overline{x}$ and $\overline{t}$ are the tachyonic space and time coordinates, $\overline{x}_0$ is tachyonic invariance, $\overline{\theta}$ tachyonic hyperbolical angle.

From (6) we have

$$\overline{x} = \overline{x}_0 \operatorname{ch}\overline{\theta}, \quad c\overline{t} = \overline{x}_0 \operatorname{sh}\overline{\theta}. \tag{7}$$

$$\overline{x}_0 = \sqrt{(\overline{x})^2 - (c\overline{t})^2}. \tag{8}$$

From (7) we have

$$\overline{\theta} = \text{th}^{-1}\frac{c\overline{t}}{\overline{x}} = \text{th}^{-1}\frac{c}{\overline{u}}. \qquad (9)$$

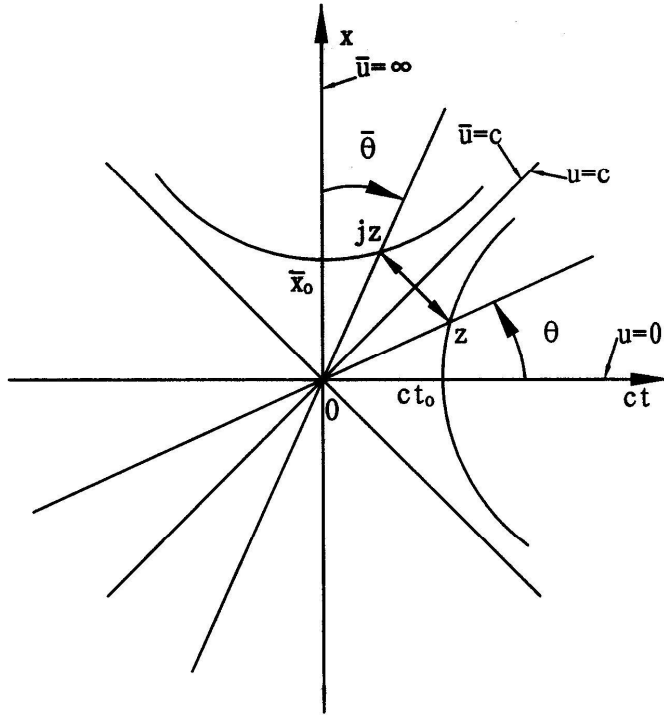where $\overline{u} \geq c$ is the tachyonic velocity.

Fig. 1. Tardyonic and tachyonic coexistence principle

Figure 1 shows the formulas (1)-(9). $j : z \rightarrow jz$ is that tardyon can be converted into tachyon, but $j : jz \rightarrow z$ is that tachyon can be converted into tardyon. $u = 0 \rightarrow u = c$ is the positive acceleration, but $\overline{u} = \infty \rightarrow \overline{u} = c$ is the negative acceleration, which coexist. At the $x-$axis we define the tachyonic unit length

$$\overline{X}_0 = \lim_{\substack{\overline{u} \rightarrow \infty \\ t \rightarrow 0}} \overline{u}t = \text{constant}. \qquad (10)$$

Since at rest the tachyonic time $t = 0$ and $\overline{u} = \infty$, we prove that tachyon is unobservable. Assume $\theta = \overline{\theta}$, from (5) and (9) we get the tardyonic and tachyonic coexistence principle [2-3]

$$u\overline{u} = c^2. \qquad (11)$$

Using the analytical method we deduce the new gravitational formula. Differentiating (11) by the time, we get

$$\frac{d\overline{u}}{dt} = -\left(\frac{c}{u}\right)^2 \frac{du}{dt}. \qquad (12)$$

$\dfrac{du}{dt}$ and $\dfrac{d\overline{u}}{dt}$ can coexist in motion, but their directions are opposite.

We study the tardyonic and tachyonic rotating motions. In 1673 Huygens discovered that the tardyonic rotation produces centripetal acceleration

$$\frac{du}{dt} = \frac{u^2}{R}, \qquad (13)$$

where R is rotating radius.

Substituting (13) into (12) we have the tachyonic centrifugal acceleration

$$\frac{d\overline{u}}{dt} = -\frac{c^2}{R}.$$ 　　　　　　（14）

(13) and (14) are twin formulas, which have the same form. From (13) we get the tardyonic centrifugal force

$$F = \frac{Mu^2}{R},$$ 　　　　　　（15）

where M is the inertial mass.
From (14) we get the tachyonic centripetal force, that is gravity

$$\overline{F} = -\frac{mc^2}{R},$$ 　　　　　　（16）

where m is the gravitational mass converted into by tachyonic mass $\overline{m}$.
(15) and (16) are twin formulas, which have the same form. (16) is a new gravitational formula.

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Using the geometrical method we deduce the new gravitational formula..
Figure 2 shows that the rotation ω of body A emits tachyon mass $\overline{m}$, which forms the tachyon and gravitation field and gives the body B revolutions u and $\overline{u}$.
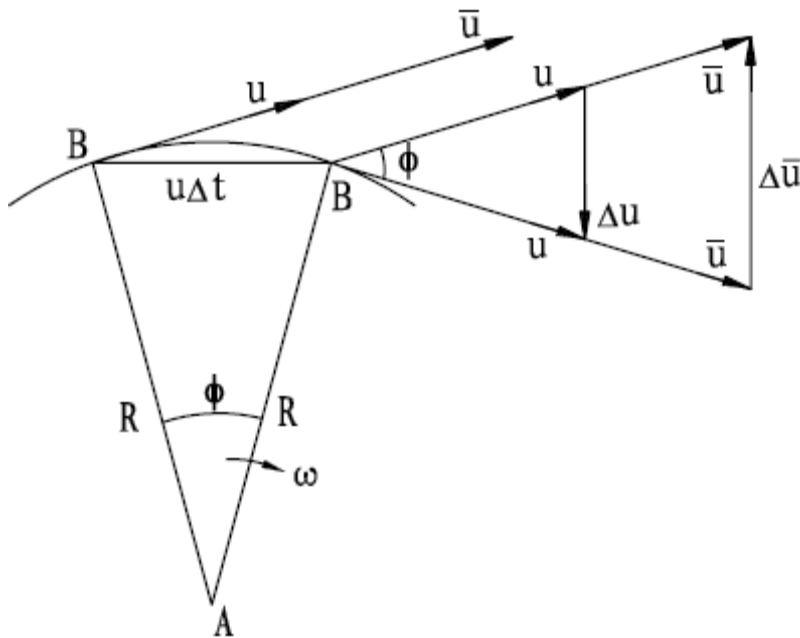

Fig.2. On body B $\dfrac{du}{dt}$ and $\dfrac{d\overline{u}}{dt}$ coexistence [2].

From Fig. 2 .it follows

$$\frac{u\Delta t}{R} = \frac{\Delta u}{u}.$$ 　　　　　　（17）

From (17) it follows the tardyon centripetal acceleration on the body B [2-6],

$$\frac{du}{dt} = \lim_{\substack{\Delta u \to 0 \\ \Delta t \to 0}} \frac{\Delta u}{\Delta t} = \frac{u^2}{R} . \qquad (18)$$

From Fig. 2. it follows

$$\frac{u\Delta t}{R} = -\frac{\Delta \overline{u}}{\overline{u}} . \qquad (19)$$

From (19) and (11) it follows the tachyon centrifugal acceleration on the body B [2-6],

$$\frac{d\overline{u}}{dt} = \lim_{\substack{\Delta \overline{u} \to 0 \\ \Delta t \to 0}} \frac{\Delta \overline{u}}{\Delta t} = -\frac{u\overline{u}}{R} = -\frac{c^2}{R} . \qquad (20)$$

On body B $\dfrac{du}{dt}$ and $\dfrac{d\overline{u}}{dt}$ coexistence.

From (18) it follows the tardyon centrifugal force on body B [2-6],

$$F = \frac{M_B u^2}{R} , \qquad (21)$$

where M_B is body B mass.

From (20) it follows the tachyon centripetal force on body B, that is gravity [2-6],

$$\overline{F} = -\frac{mc^2}{R} , \qquad (22)$$

where m is the gravitation mass converted into by tachyon mass $\overline{m}$ which is unobservable but m is observable. $\overline{m}$ give all particles mass which replace the Higgs bosons. Elusive Higgs bosons have not been produced at the Large Hadron Collider at CERN.

(22) is a new gravitational formula. The equality of gravitational and inertial mass does not exist. Hence general relativity is wrong. On body B F and $\overline{F}$ coexistence.
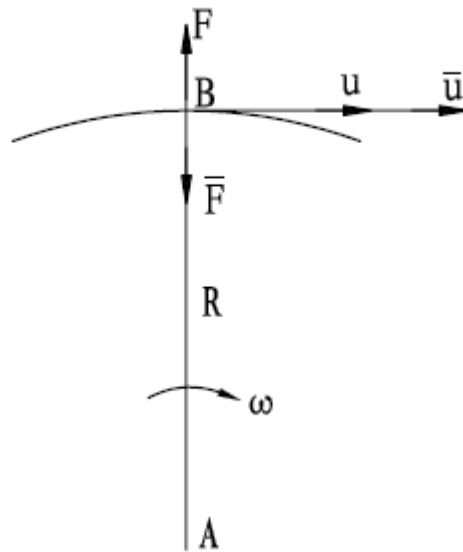

Fig.3. On body B F and $\overline{F}$ coexistence[2].

From Fig. 3, it follows

$$F + \overline{F} = 0 . \qquad (23)$$

From (21), (22) and (23) it follows

$$\frac{m}{M_B} = \frac{u^2}{c^2} . \qquad\qquad (24)$$

Body B increases mass m and centrifugal force is greater than gravitation force, then body B expands outward. [5,6]

From (22) it follows Newtonian gravitation formula. The m is proportional to body A mass M_A, in (24) m is proportional to M_B, is inversely proportional to the distance R between body A and body B. It follows

$$m = k\frac{M_A M_B}{R} , \qquad\qquad (25)$$

where k is constant

Substituting (25) into (22) it follows the Newtonian gravitation formula [2-6]

$$\overline{F} = -G\frac{M_A M_B}{R^2} , \qquad\qquad (26)$$

where $G = kc^2 = 6.673 \times 10^{-8} \text{ cm}^3 / \text{g} \cdot \sec^2$ is gravitation constant.

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Beyond the Newtonian Gravitational Theory and Overthrow the Einstein Gravitational Theory
超越牛顿引力理论打倒爱因斯坦引力理论 (找到一个新引力公式)

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Abstract: Newtonian did not explain what is. gravity? Hence his theory of gravity is only a conjecture.Einstein theory of gravitation is based on inertial and gravitational mass are equal(the happiest thought of my life) which does not exist. Hence his theory of gravity is a 100% wrong. Einstein believes the tachyon does not exist,which is wrong.Physical Review Letters and Phys.Rew published many mistakes articles,some even won the Nobel prize.But they are not published the tachyonic theory articles.21st century physics is the tachyonic era. Jiang prove that the gravitational theory is tahyonic one and deduce the new gravitational formula including Newtonian gravitational formula (http://www.vixra.org/pdf/1205.0080v1.pdf).Physicists do not understand and study tachyonic theory.Their research results are almost wrong.Higgs boson,quantum information, black hole, the Big Bang, dark matter and dark energy,quarks, and gravitational wave do not exist. 牛顿并没有说明引力是什么？因此他的引力理论仅是一个猜想。爱因斯坦引力理论基础是惯性质量等于引力质量, 这是不成立的, 引力速度是光速, 因此他的广义相对论引力理论是 100%错的,<thought experiment> does not exist。1933 年爱因斯坦说: "可是创立(广义相对论) 的基本原理蕴藏于数学之中, 因此, 在某种意义上来说, 我认为纯粹推理可以掌握客观现实, 这正是古人所梦想的。"20 世纪所有理论物理学家沿着这思路研究物理, 例如微分几何, 从广义相对论得出黑洞暗物质暗能量, 这些都不存在。1905 年爱因斯坦指出超光速不存在, 到今天国内外没有多少人研究超光速理论, 得出一个错误结果: 超光速粒子是虚质量。1975 年蒋春暄建立亚光速和超光速统一理论,1976 年证明引力是超光速转动产生向心力, 并得出新引力公式。牛顿引力公式是新引力公式一个特例, 国外对这新引力公式评价:It is accepted as being self-evident(它被认为不言而喻的)。本文重写 1976 年论文。如有人研究和合作这种理论三十年前就完成, 今天公布中国也不会有人支持, 仍不会有人承认。蒋春暄国内外都知道他, 仍遭到国内外封杀, 连蒋春暄母校北京航空航天大学不承蒋校友, 成果献给母校被拒绝, 中科院死死抓住北航不放, 派干部控制北航。这样整个中国都被中科院控制, 中国就没有任何人和单位支持蒋春暄, 完成整个中国对蒋春暄封杀, 中科院就放心了。 国内外联合起来对付蒋春暄一个人,不允许有人支持他,不允许发表他的论文, 但现在有网络, 本文巳在国外广泛传播。国外已有三个网站传播, 最有意义是报道题目: Deduction of new gravitational formula 即新引力公式推导, 突引力公式.

　　文化大革命中蒋春暄写一文<用毛泽思想创立一门新型数学>,1968 年发表由叶志江主编清华大学井岗山出版社<理论批判>上, 中科院物理所吴咏时来信, 这种数学可研究相对论, 蒋春暄开始学习相对论, 建立亚光速和超光速时空统一理论, 蒋春暄参加中科院相对论批判讨论会, 本文被何祚庥否定, 后来国外也发表类似结果,< 物理>同意在 1975 年发表本文,数学所刘易成和科大张家铝写两篇否定文章同时发表, 世界上第一篇划时代的论文就这样发表了, 如在今天这样文章完全不可能发表, 因为当时中科院专家没权说话, 所以本文能在中科院杂志发表。秦元勋当时也是反相对论的, 他爱人在北京天文台工作, 蒋春暄发明新引力公式于 1976 在内部杂志<北京天文台台刊>上发表. 这篇论文是人类第一次给引力一个真正说明, 国内外都看不到, 但非常清楚, 2012-04-19 决定重写.2012-04-23 寄到 Nature, 受到高度重视后来被拒绝,nature 接受又拒绝这样多次, 他们理解这篇文章, 但没有中国和外国名人支持, Nature 一定会马上发表。因本文是中国的, 没有中国支持像这样划时代论文国外是不会发表的。中科院利用这特点可以控制中国民间科研成果, 没有中科院支持民科只有死路一条。但有网络, 国内外可上网并发 email 给国内外专家, http://www.vixra.org;http://www.mrelativity.net; http://www.gsjournal.net. 只收到 Walter H. G.Lewin 的 2012-06-10 email: Publish this in a refered journal and once it is accepted buy yourself a first class ticket to Stockholm to pick up your Nobel prize for physics. 他理解本文, 但内容也清楚,这篇文是非常重要. 超越牛顿打倒爱因斯坦本身就是一件非常重大事件。中国人的重大发现必须在国际上大力宣传, 否则就不会得到其他国家承认。中科院只允许外国人超过他们, 不允许中国人超过他们。如超过他们被评为伪科学不允许存在。要

保持中科院在中国绝对权威，要保证周光召路甬祥白春礼稳坐人民大会堂控制整个中国科技界，主席和总理都要听他们指挥，在中国没有科学人权保护，宪法是空洞口号不起作用。何祚庥方舟子司马南可以给任何有巨大贡献的人戴上伪科学帽子，并联合国外势力打倒中国人的成果。这样论文能得到中科院支持是非常困难的。中国创新多难，中国创新是一个没有法律保护空洞口号。60 年来中国没有重大创新成果，不是没有重大成果，而是中国不支持，不允许发表。最后把重大成果封杀掉。这就是中国现况。中央指示中科院组织专家评定，向国外宣布这新引力公式，国外才承认这新引力公式。中科院不干，他们组织国内外人不承认这公式，不允许发表这公式。国外来信我想把这有趣文章上我们网你同意吗？将未会承认这个新引力公式。这公式在国外广泛传播。它是天文宇宙物理学的基础，开创超光速新时代。最近国内外大力研究量子通信，量子计算机，量子纠缠它的基础是超光速，这些都不存在。2012 年是找上帝粒子年代，上帝粒子根本不存在。正负质子对撞只产生正负电子，不会得出任何有用结果。当代西方基础研究例如数学物理研究都是吓猜，没有多少创新成果。中国应该重视国内这方面人才。西方著名杂志发表文章有很多是错的，以这些杂志发表文章就算人才也不对的，中国有这么多人肯定有很多创新思维，中国政府应该有单位和政策支持这些人才。中科院何祚庥方舟子等把这些成果定为伪科学到处打假。蒋春暄在数学和物理作出这么大贡献，被中科院定为伪科学，到今天在中国无立足之地。

这应该是世界上最短一篇论文也是最重要一篇论文，也是一般人都能理解的论文。图 1,2 是真正引力模型，从这得出结果是正确的简单的。

整个宇宙是由可观测亚光速物质和不可观测超光速物质组成的。我们只研究亚光速物质，没有研究超光速物质。但超光速世界存在，人们用亚光速手段研究超光速世界，只能得出错误结果，对引力研究就是一个明显例子。上帝粒子，超弦论，万有理论，大爆炸，黑洞，夸克，引力波，暗物质，暗能量，量子通信，量子纠缠等都是猜想，不可观测的和不存在的，美国 Physical Review Letters and Phys.Rew 发表大量错误的论文，许多错误成果还获得诺贝尔奖，这就是当代物理学和天文学现状。本文在国际很快传播，我们相信他们能够理解本文，会对当代物理学提出质问？20 世纪物理学许多问题没有解决是没有考虑超光速问题，宏观和微观物质稳定性都是由我们不能观测超光速粒子完成。21 世纪物理学以这篇文章作为突破口开始进入超光速时代。这将改变整个物理学的面貌，这工作从中国开始，这是物理学发展进入一个新时代。完成 20 世纪开创量子力学和相对论统一的工作。希望中国政府支持这一划时代的工作。

从伽利略牛顿爱因斯坦研究万有引力都是从实验出发，没有从理论深入研究，所以他们结果都是猜想，有时猜对，有时猜错，引力子是不可直接测量的超光速粒子。这么大成就在中国无人理睬的。13 亿人没有一个人关心这件大事，真不可理解，中国就这么落后不需要真正科学。中国没一位领导出来说话支持蒋春暄，让中科院对蒋春暄这样野蛮封杀。唯一办法用网络在国内外猛宣传，中国对蒋春暄打压封杀一点不会改变，白春礼更加疯狂打压封杀不承认蒋春暄的工作。

2012-04-23 送 Nature，马上来信非常重视这篇论文，过两天来信我们不进一步考虑这篇论文，这可能是中科院在起作用。如中科院推荐，nature 一定会马上发表，nature 认为这是一篇非常重要论文，因 nature 是高级科普杂志，蒋春暄用图 1,2 为 nature 读者写这篇论文，一般读者都能理解引力。中国成果中国不支持，外国人不会承认，蒋春暄证明费马大定理这么大成就中国不需要送给怀尔斯，2012-04 中国科学院院刊席南华宣布费马大定理是 1995 年被怀尔斯证明。蒋春暄证明费马大定理在中国家喻户晓，蒋春暄因首先证明费马大定理荣获 2009 年国际金奖，但中科院死命不承认。中科院目的就是不支持不承认蒋春暄所有成果，不允许中国任何单位和个人支持蒋春暄，不允许任何媒体再报道蒋春暄成果。中国没有一个大学校长出来支持蒋春暄伐时代成果，如你出来支持，可把你大学提高为世界第一流大学，你的大名将和蒋春暄成果流芳百世。网络己把本文复盖整个世界。我们都熟悉引力但我们都不理解引力。因为引力是超光速运动，在静止系我们看不见引力，只看到引力作用物体下降，过去人们对引力机制提出各种各样猜想。但没有一个满意解释。图 1,2 是 1976 年用中文发表，但非常清楚，2012-04-19 决定重写。所有人都能理解引力。本文给出引力一个真正说明，已超越牛顿引力理论打倒爱因斯坦广义相对论引力理论，己在国外上网 http://www.vixra.org/pdf/1204.0085v1.pdf，引起很多专家恐慌，许多物理问题将要重写，国外网马上转载，证明引力是超光速转动惯性向心力，亚光速转动惯性离心力，这两种力都是惯性力。核心中力也是这种力。用图表示更有说服力，引力是超光速粒子的向心力，过去爱因斯坦把它看作数学问题，图 1 把引力看作超光速问题，就变成非常简单，牛顿引力是猜想，他没有说明引力是什么？欧洲核子研究中心(CERN) 主要任务找上帝粒子，证明夸克模型是正确的。上帝粒子根本不存在，正负质子对撞只产生正负电子。2012 年世界第一件大事就是寻找上帝粒子，本文就是否定上帝粒子不存在，在国内外宣传这短文。蒋春暄研究任何问题中国科学院都不支持，这个问题中国也不支持，他们什么也做不出，中国又如何发展科学。无人研究占宇宙半边天的超光速世界，目前国外没有正确超光速理论，国

外研究量子通信, 量子计算机, 量子纠缠, 理论基础都是超光速问题, 都是不可测量的.

国内外物理学家不相信本文, 引力就这么简单。量子信息权威 Anton Zellinger 指出:Although such experiments now rule out Einstein point of view,they gave rise to the new fields of quantum information processing.But the conceptual problems are not fully settled. 开创了量子信息处理的新领域, 但是概念上的问题还没有完全解决. 他认为量子信息基础问题还没有解决.

想不到在中国有这样奇怪现象(But in China there is such a strange phenomenon(1),周光召路甬祥白春礼中科院我们都是中国人,一个目标就是为中华民族伟大复兴而奋斗。十年前科技日报报道蒋春暄划时代的成果,已成为中国人民家喻户晓的新闻。你们吓坏了, 你们下令整个中国再也不允许报道和支持蒋春暄的工作.著名科普杂志总主编说: 我们想报道蒋春暄成果但上级有指示不允许报道他所有工作。蒋春暄 1991 年证费马大定理, 它是 20 世纪最大成就, 是人类智力最高峰, 是 354 年以来没有数学家证明数学难题, 它相当若干个普通诺贝尔奖, 它可同人类登月球相提并论成就, 它可同人类发现 DNA 和原子分裂相提并论成就, 这么大成就中国不需要中科院把它送给美国怀尔斯, 并把 2005 年中国邵逸夫 100 万美元数学奖送给怀尔斯。到今天你们仍不承认中国蒋春暄证明费马大定理, 仍在中国宣传怀尔斯。并联合国外不允许外国人再支持蒋春暄的工作, 支持蒋春暄美国科学家 Santilli 也再不支持蒋春暄。如你们支持蒋春暄他可获国内外数学大奖, 为中华民族带来巨大荣誉, 你们不干。中国人民把你们养起来, 你们在中国干些卖国犯罪的事。这篇论文超越牛顿打倒爱因斯坦, 你们在暗地里反对, 表面上不理睬.中国是落后不需要科学的国家, 不允许在中国出现像牛顿爱因斯坦高斯欧拉这样大科学家, 这样科学家在中国无立足之地, 得不到支持得不到关心, 只有打击和封杀。一旦出现马上被消灭掉. 这是中国一个奇怪现象。

想不到在中国有这样奇怪现象(But inChina there is such a strange phenomenon)(2),2001-12-12 和 2002-01-12 蒋春暄母校校长曹传钧和沈士团邀请蒋春暄去北航成立数学小组研究他开创的数学。新校长李未上台, 拒绝蒋春暄去北航, 人事处处长当面对蒋春暄说北航不需要你的成就。中科院北大派人进入北航死死控制北航, 李未下台, 新校长怀进鹏和中科院更紧密联合, 北航已成为中科院直接领导大学, 北航是中科院封杀打击蒋春暄最后一个境地, 这样就完成国内外对蒋春暄全面封杀打击, 这样国内外没有人和单位支持和关心蒋春暄. 中科院就放心了, 这都是暂时, 蒋春暄著作国内外都在读巳家喻户晓.中央也不关心, 让中科院对蒋春暄这样野蛮封杀打击。因中国是落后不需要科学的国家, 不允许像蒋春暄对物理学作出这样贡献超越牛顿打倒爱因斯坦和对数学作出巨大贡献的科学家存在。中科院在未来 500 年不会有人超过蒋春暄。 他在北航就开始研究数学应该是北航成就。2012 年是北航 60 周年校庆, 蒋春暄把他成果献给校庆也被拒绝, 到今天北航仍不承认他是是北航校友, 这样大学只有中国存在。李未和怀进鹏将成为北航罪人。蒋春暄感谢母亲北航对他培养, 他的所有成果都是属于北航的。如母校北航支持蒋春暄划时代的工作, 中科院就无法下台, 向中国 13 亿人民交待他们支持怀尔斯卖国活动, 所以中科院死命抓住北航不放。中科院联合国内外不允许任何人承认费马大定理是中国人首先证明的。怀尔斯完蛋了, 中科院仍在中国宣传怀尔斯。中科院抓住没有中国最高学府中科院承认和支持, 西方也不会承认。不管中国有多少人支持蒋春暄, 不管中央支持蒋春暄都不起作用, 一切都要听中科院的, 难道中国就这样下去, 一点办法都没有。中科院对蒋春暄成果吓坏了, 他们联合国内外包括蒋母校北航对付蒋春暄一个人, 因为蒋对科学贡献太大。如中国支持蒋并向世界宣布他所有成果, 这将在世界上引起翻天覆地变化, 西方只好承认他的成果, 这是中华民族伟大复兴。这样一件大事难道中国不需要吗? 中科院应该必须做这件事, 但是中科院到今天仍对蒋春暄进行野蛮打击封杀和不承认。这是中国一个奇怪现象。

Appendix

Gravity is a great mystery. No one has since given any machinery. In this paper we give a simple machinery. Gravity is the tachyon centripetal force.

Anybody may understand gravitation.

Using the tardyon and tachyon coexistence principle [1]

$$u\overline{u} = c^2 \qquad\qquad (1)$$

where c is light velocity in vacuum, $u \le c$ tardyon velocity and $\overline{u} \ge c$ tachyon velocity.

We deduce a new gravitation formula: $\overline{F} = -\dfrac{mc^2}{R}$.

Figure 1 shows that the rotation ω of body A emits tachyon mass $\overline{m}$, which forms the tachyon and gravitation field and gives the body B revolutions u and $\overline{u}$.
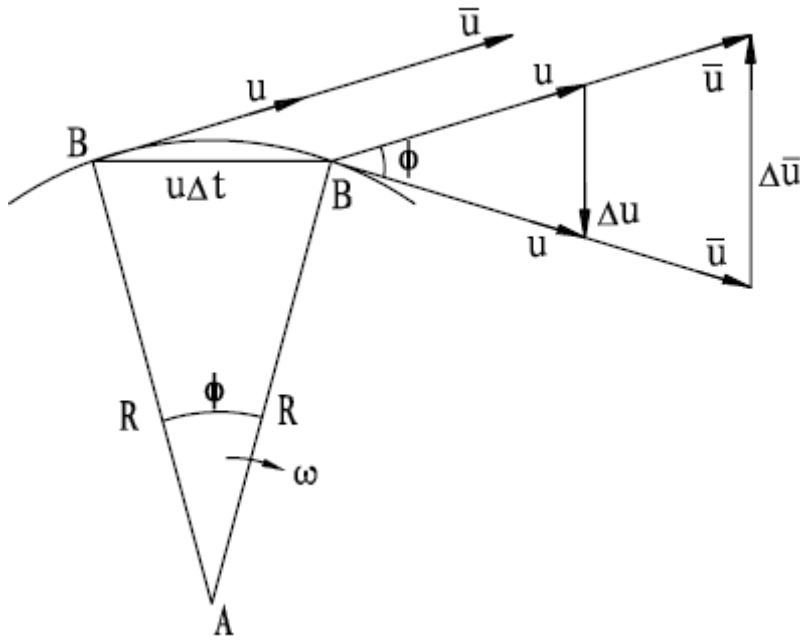
Fig.1. On body B $\dfrac{du}{dt}$ and $\dfrac{d\bar{u}}{dt}$ coexistence [2].

From Fig. 1 it follows

$$\frac{u\Delta t}{R} = \frac{\Delta u}{u} \quad . \qquad\qquad (2)$$

From (2) it follows the tardyon centripetal acceleration on the body B [2-6],

$$\frac{du}{dt} = \lim_{\substack{\Delta u \to 0 \\ \Delta t \to 0}} \frac{\Delta u}{\Delta t} = \frac{u^2}{R} \quad . \qquad\qquad (3)$$

From Fig. 1 it follows

$$\frac{u\Delta t}{R} = -\frac{\Delta \bar{u}}{\bar{u}} \quad . \qquad\qquad (4)$$

From (4) and (1) it follows the tachyon centrifugal acceleration on the body B [2-6],

$$\frac{d\bar{u}}{dt} = \lim_{\substack{\Delta \bar{u} \to 0 \\ \Delta t \to 0}} \frac{\Delta \bar{u}}{\Delta t} = -\frac{u\bar{u}}{R} = -\frac{c^2}{R} \quad . \qquad\qquad (5)$$

On body B $\dfrac{du}{dt}$ and $\dfrac{d\bar{u}}{dt}$ coexistence.

From (3) it follows the tardyon centrifugal force on body B [2-6],

$$F = \frac{M_B u^2}{R}, \qquad\qquad (6)$$

where M_B is body B mass.

From (5) it follows the tachyon centripetal force on body B, that is gravity [2-6],

$$\bar{F} = -\frac{mc^2}{R}, \qquad\qquad (7)$$

where m is the gravitation mass converted into by tachyon mass $\overline{m}$ which is unobservable but m is observable. $\overline{m}$ give all particles mass which replace the Higgs bosons. Elusive Higgs bosons have not been produced at the Large Hadron Collider at CERN. On body B F and $\overline{F}$ coexistence.
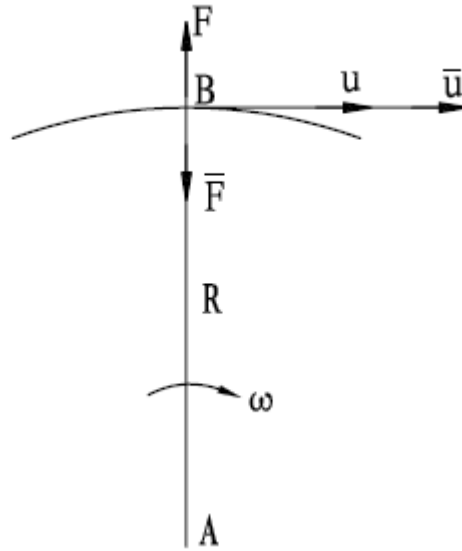

Fig.2. On body B F and $\overline{F}$ coexistence[2].

From Fig. 2, it follows

$$F + \overline{F} = 0 .$$ （8）

From (6), (7) and (8) it follows

$$\frac{m}{M_B} = \frac{u^2}{c^2} .$$ （9）

Body B increases mass m and centrifugal force is greater than gravitation force, then body B expands outward. [5,6]

From (7) it follows Newtonian gravitation formula. The m is proportional to body A mass M_A, in (9) m is proportional to M_B, is inversely proportional to the distance R between body A and body B. It follows

$$m = k\frac{M_A M_B}{R} ,$$ （10）

where k is constant

Substituting (10) into (7) it follows the Newtonian gravitation formula [2-6]

$$\overline{F} = -G\frac{M_A M_B}{R^2} ,$$ （11）

where $G = kc^2 = 6.673 \times 10^{-8}$ cm^3/ g·sec^2 is gravitation constant.

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All Eyes are on the Elusive Higgs and Neutrinos

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Abstract: In 2012 all eyes are on elusive Higgs thought to give all particles mass and neutrinons may be tachyons. Both which are false and unobservable. This paper explains the behavior of the entire universe from the smallest to the largest scales, found an equation that changed the universe: $\overline{F} = -mc^2 \big/ R$, established the expansion theory of the universe without dark matter and dark energy,and obtained the expansion acceleration: $g_e = u^4 \big/ C^2 R$. It shows that gravity is action-at-a-distance and that a gravitational wave is unobservable. Thus,a new universe model is suggested that the universe has a centre consisting of the tachyonic matter..

Keywords: universe equation; the universe expansion theory

We rewrite the new gravitational formula

$$\overline{F} = -\frac{mc^2}{R}, \qquad\qquad (16)$$

where m is the gravitational mass converted into by tachyonic mass $\overline{m}$ which is unobservable, but m is observable, to see (18), (19) and Fig.2. $\overline{m}$ thought to give all particles mass. $\overline{m}$ is elusive Higgs mass, which is unobservable. Elusive Higgs bosons have not been produced at the Large Hadron Collider at CERN. Proton-proton collisions produce only the electrons and positrons, not quarks. All elementary particles consist of electrons and positrons. The Big Bang has not recreated at the Large Hadron Collider at CERN,because the quarks and Big Bang are not exist in the Universe.Proton-proton collisions produce tardyons and tachyons.Therefore the Large Hadron Collider experiments should consider tachyonic action. One should rewrite the elementary particle theory.
We rewrite (10)

$$\overline{x}_0 = \lim_{\substack{\overline{u} \to \infty \\ t \to 0}} \overline{u}t = \text{constant}, \qquad\qquad (10)$$

where t is the rest time. Since at rest system tachyonic rest time $t = 0$ and $\overline{u} = \infty$. It shows that tachyon is unobservable and an action-at-a-distance to see Fig. 1. If neutrinos may be tachyons, then neutrinos are unobservable.

See (15) and (16) mu^2 is the tardyonic energy, mc^2 is the tachyonic and gravitational energy which is not tardyonic energy. We give new explanation of Einstein mass-energy formula. The Large Hadron Collider experiments should consider tachyonic energy. (10) is foundations of cosmology and particle physics.
Anyone can understand tachyonic theory and new gravitational formula (16)
http://vixra.org/pdf/1007.0018v1.pdf

According to Jiang idea[1], in the Universe there are two kinds of matter: (1) observable subluminal matter called tardyons (locality) and (2) unobservable superluminal matter called tachyons (nonlocality). They coexist in motion. What are tachyons? Historically tachyons are described as particles which travel faster than light. Describing tachyon as a particle with an imaginary mass is wrong[2]. In our theory[1] tachyon has no rest time and no rest mass. It is unobservable. Tachyons can be converted into tardyons and vice versa. Tardyonic rotating motion produces the centrifugal force but tachyonic rotating motion produces the centripetal force which is force of gravity. Using the coexistence principle of tardyons and tachyons it follows that

an equation that changed the universe: $\overline{F} = -\dfrac{mc^2}{R}$. We establish the expansion theory of a universe without dark matter and dark energy. We obtain the expansion acceleration:

$g_e = \dfrac{u^4}{C^2 R}$. We unify the gravitational theory and particle theory and explain the behavior of the entire universe from the smallest to the largest scales. In this universe there are no quarks ，no Higgs particles ,and no black holes. The geometrization of all physical fields is a mathematical guess which has no basis in physical reality, because it does not consider and understand the tachyonic theory. It shows that gravity is action-at-a-distance and that a gravitational wave is unobservable.We suggest a new universe model that the universe has a centre consisting of the tachyonic matter.

An equation that Changed the Universe: $\overline{F} = -\dfrac{mc^2}{R}$

We first define two-dimensional space and time ring[1]

$$z = \begin{pmatrix} ct & x \\ x & ct \end{pmatrix} = ct + jx, \tag{1}$$

where x and t are the tardyonic space and time coordinates, c is light velocity in vacuum, $j = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$.

(1) can be written in Euler form

$$z = ct_0 e^{j\theta} = ct_0(\mathrm{ch}\,\theta + j\,\mathrm{sh}\,\theta), \tag{2}$$

where ct_0 is the tardyonic invariance, and θ is the tardyonic hyperbolical angle.

From (1) and (2) it follows

$$ct = ct_0\,\mathrm{ch}\,\theta, \quad x = ct_0\,\mathrm{sh}\,\theta \tag{3}$$

$$ct_0 = \sqrt{(ct)^2 - x^2}. \tag{4}$$

From (3) it follows

$$\theta = \mathrm{th}^{-1}\frac{x}{ct} = \mathrm{th}^{-1}\frac{u}{c}. \tag{5}$$

where $c \geq u$ is the tardyonic velocity, $\mathrm{ch}\,\theta = \dfrac{1}{\sqrt{1-(u/c)^2}}$ and $\mathrm{sh}\,\theta = \dfrac{u/c}{\sqrt{1-(u/c)^2}}$.

The z denotes space-time of the tardyonic theory.
Using the morphism $j : z \to jz$, it follows

$$jz = \overline{x} + jc\overline{t} = \overline{x}_0 e^{j\overline{\theta}} = \overline{x}_0(\mathrm{ch}\,\overline{\theta} + j\,\mathrm{sh}\,\overline{\theta}), \tag{6}$$

where $\overline{x}$ and $\overline{t}$ are the tachyonic space and time coordinates, $\overline{x}_0$ is tachyonic invariance, $\overline{\theta}$ tachyonic hyperbolical angle.

From (6) it follows

$$\overline{x} = \overline{x}_0\,\mathrm{ch}\,\overline{\theta}, \quad c\overline{t} = \overline{x}_0\,\mathrm{sh}\,\overline{\theta}. \tag{7}$$

$$\overline{x}_0 = \sqrt{(\overline{x})^2 - (c\overline{t})^2}. \tag{8}$$

From (7) it follows

$$\overline{\theta} = \mathrm{th}^{-1}\frac{c\overline{t}}{\overline{x}} = \mathrm{th}^{-1}\frac{c}{\overline{u}}. \tag{9}$$

where $\overline{u} \geq c$ is the tachyonic velocity, $\mathrm{ch}\,\overline{\theta} = \dfrac{1}{\sqrt{1-(c/\overline{u})^2}}$ and

$$\text{sh}\,\overline{\theta} = \frac{c/\overline{u}}{\sqrt{1-(c/\overline{u})^2}}.$$

The jz denotes space-time of the tachyonic theory. Both the z and the jz form the entire world but the jz world is unexploited and unstudied.
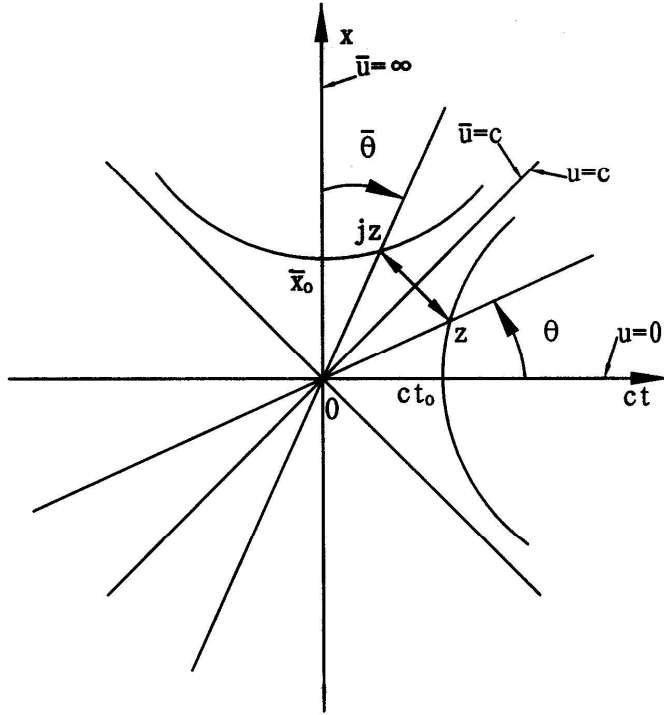

Fig. 1. Minkowskian spacetime diagram

Figure 1 shows the formulas (1)-(9). $j: z \to jz$ shows that a tardyon can be converted into a tachyon, but $j: jz \to z$ shows that a tachyon can be converted into a tardyon. $u = 0 \to u = c$ is a tardyonic velocity, but $\overline{u} = \infty \to \overline{u} = c$ is a tachyonic velocity, which coexist. At the $x-$axis we define the tachyonic string length

$$\overline{x}_0 = \lim_{\substack{\overline{u}\to\infty \\ t\to 0}} \overline{u}t = \text{constant}. \qquad (10)$$

where t is the rest time.

Since at rest the tachyonic string time $t = 0$ and $\overline{u} = \infty$, it shows that the tachyon is a string which is unobservable. In the rest system the tachyonic string motion is an action-at-a distance motion. This simple thought made a deep impression on me. It impelled me toward the only string theory[1]. Other string theories all are guesses. Assume $\theta = \overline{\theta}$, from (5) and (9) it follows that the tardyonic and tachyonic coexistence principle[1,3,4]

$$u\overline{u} = c^2 \qquad . \qquad (11)$$

Differentiating (11) by the time, it follows

$$\frac{d\overline{u}}{dt} = -\left(\frac{c}{u}\right)^2 \frac{du}{dt}. \qquad (12)$$

$\dfrac{du}{dt}$ and $\dfrac{d\overline{u}}{dt}$ can coexist in motion, but their directions are opposite.

We study the tardyonic and tachyonic rotating motions. The tardyonic rotation produces centripetal acceleration

$$\frac{du}{dt} = \frac{u^2}{R},$$ （13）

where R is rotating radius.

Substituting (13) into (12) it follows that the tachyonic rotating produces centrifugal acceleration

$$\frac{d\overline{u}}{dt} = -\frac{c^2}{R}.$$ （14）

It is independent of tachyonic velocity $\overline{u}$, only inversely proportional to radius R .

(13) and (14) are dual formulas, which have the same form. It is unique and perfect. From (13) it follows the tardyonic centrifugal force

$$F = \frac{Mu^2}{R},$$ （15）

where M is the inertial mass.

From (14) it follows the tachyonic centripetal force, that is gravity

$$\overline{F} = -\frac{mc^2}{R},$$ （16）

where m is the gravitational mass converted into by tachyonic mass $\overline{m}$ which is unobservable but m is observable.

Whether $u = 0$ or $u \neq 0$, all matter produces gravity. (15) and (16) are dual formulas, which have the same form. (16) is a new gravitational formula called an equation that changed the universe. This simple thought made a deep impression on me. It impelled me toward a theory of gravitation. It has simplicity, elegance and mathematical beauty. It is the foundations of gravitational theory and cosmology. In the universe there are two main forces: the tardyonic centrifugal force (15) and tachyonic centripetal force (16) which make structure formation of the universe.

Now we study the freely falling body. Tachyonic mass $\overline{m}$ can be converted into tardyonic mass m , which acts on the freely falling body and produces the gravitational force

$$\overline{F} = -\frac{mc^2}{R},$$ （17）

where R is the Earth radius.

We have the equation of motion

$$\frac{mc^2}{R} = Mg,$$ （18）

where g is gravitational acceleration, M is mass of freely falling body.

From (18) it follows the gravitational coefficient

$$\eta = \frac{m}{M} = \frac{Rg}{c^2} = 6.9 \times 10^{-10}.$$ （19）

Eötvös(1922) experiment $\eta \sim 5 \cdot 10^{-9}$ and Dicke experiment $\eta \sim 10^{-11}$ [5]. Since the gravitational mass m can be transformed into the rest mass in freely falling body, we define Einstein's gravitational mass $M_g = M_i + m$ and inertial mass $M_i = M$ [6]. It follows

$$M_g > M_i.$$ （20）

Therefore it shows that the principle of equivalence is nonexistent.

The expansion theory of the universe without dark matter and dark energy

The Big Bang threw all the matter in the universe outwards. Both Newton's and Einstein's theories of gravity predict that the expansion must be slowing down to some degree: the mutual gravitational attraction of all the matter in all the galaxies should be pulling them inwards. But measurements of distant supernovae show just the opposite[7] . All

the matter in the universe appears to be accelerating outwards. Its speed is picking up. There is no agreement yet about how to explain these mysterious observations. Now we explain our accelerating universe.

Using (16) we study the expansion theory of the Universe. Figure 2 shows a expansion model of the Universe. The rotation ω_1 of body A emits tachyonic flow, which forms the tachyonic field. Tachyonic mass $\overline{m}$ acts on body B, which produces its rotation ω_2, revolution u and gravitational force

$$\overline{F}_1 = -\frac{mc^2}{R},\tag{21}$$

where R denotes the distance between body A and body B, m is gravitational mass converted into by tachyonic mass $\overline{m}$ which is unobservable but m is observable.

The revolution of the body B around body A produces the centrifugal force
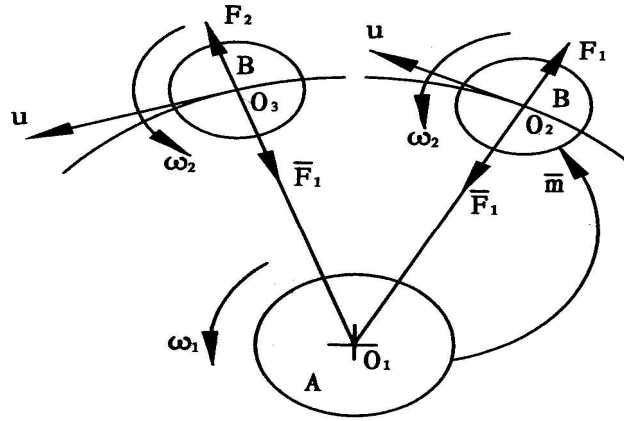
$$F_1 = \frac{M_B u^2}{R},\tag{22}$$

Fig. 2. A expansion model of the Universe

where M_B is the inertial mass of body B, u is the orbital velocity of body B.

At the O_2 point we assume

$$F_1 + \overline{F}_1 = 0.\tag{23}$$

From (23) it follows that the coexistence of the gravitational force and centrifugal force.
From (21)-(23) it follows the gravitational coefficient

$$\eta = \frac{m}{M_B} = \left(\frac{u}{c}\right)^2.\tag{24}$$

At the O_3 point the tachyonic mass $\overline{m}$ can be converted into the rest mass m in body B, it follows

$$F_2 = \frac{M_B u^2}{R} + \frac{mu^2}{R}.\tag{25}$$

Since $F_2 + \overline{F}_1 > 0$, centrifugal force F_2 is greater than gravitational force $\overline{F}_1$, then the body B expands outwards and its mass increases. This is a expansion mechanism of the Universe. From (21)-(23) we have

$$F_2 + \overline{F}_1 = \frac{mu^2}{R} = M_B g_e.\tag{26}$$

From (26) we obtain the expansion acceleration

$$g_e = mu^2 \big/ M_B R .$$ (27)

Substuting (24) in   (27) we obtain

$$g_e = \frac{u^4}{C^2 \dot{R}}$$ (28)

  If body A is the Earth, then body B is the Moon; if body A is the Sun, then body B is the Earth; ⋯. It can explain our accelerating universe. In this model universe there are no dark matter and no dark energy. This simple thought made a deep impression on me. It impelled me toward a expansion theory of the universe without dark matter and dark energy.

If the body A is the Sun and body B is the planet. We calculate the gravitational coefficients η as shown in table 1.

Table 1:Values of the gravitational coefficients η

Planet	u (km/sec)	$\eta(10^{-10})$
Mercury	47.89	255.2
Venus	35.03	136.5
Earth	29.79	98.7
Mars	24.13	64.8
Jupiter	13.06	19.0
Saturn	9.64	10.3
Uranus	6.81	5.2
Neptune	5.43	3.3
Pluto	4.74	2.5

Since gravitational mass m can be transformed into the rest mass in body B , we define Einstein's gravitational mass $M_g = M_i + m$ and inertial mass $M_i = M_B$ [6]..
It follows

$$M_g > M_i .$$ （29）

Therefore it shows that the principle of equivalence in the Solar system is nonexistent. Of all the principles at work in gravitation, none is more central than the principles of equivalence[5], which could be wrong.

The tachyonic mass $\overline{m}$ can be converted into electrons and positrons which are the basic building-blocks of elementary particles [8,9]. In this universe there are no Higgs particles. They have not been produced at the Large Hadron Collider and other particle accelerators.

From (21) it follows Newtonian gravitational formula. The m is proportional to M_A , which denotes inertial mass of body A , in (24) m is proportional to M_B , is inversely proportional to the distance R between body

A and body B. It follows

$$m = k\frac{M_A M_B}{R},\qquad(30)$$

where k is a constant.

Substituting (30) into (21) it follows Newtonian gravitational formula[3,4]

$$\overline{F}_1 = -G\frac{M_A M_B}{R^2},\qquad(31)$$

where $G = kc^2$ is a gravitational constant.

We have Einstein's gravitational mass

$$M_g = M_i + m = M_i(1+\eta).\qquad(32)$$

Substituting (32) into (31) it follows Newtonian generalized gravitational formula

$$\overline{F}_1 = -G\frac{M_A(1+\eta_A)M_B(1+\eta_B)}{R^2},\qquad(33)$$

where η_A and η_B denote gravitational coefficients of body A and body B separately.

Assume ρ_A and ρ_B denote the densities of body A and body B separately. In the same way from (33) it follows unified formula of the gravitational and strong forces [4]

$$\overline{F}_1 = -G_0\frac{\rho_A M_A(1+\eta_A)\rho_B M_B(1+\eta_B)}{R^2}\qquad(34)$$

where $G_0 = 5.2\times10^{-10}$ cm^9/g$^3\cdot$sec^2 is a new gravitational constant.

In the nucleus exists the strong interactions. It follows[4]

$$\frac{\text{Strong interaction}}{\text{Gravitational interaction}} = \frac{G_s}{G_g} = 10^{38}\qquad(35)$$

where $G_g = 6.7\times10^{-8}$ cm^3/g$\cdot$sec^2 and $G_s = 6.7\times10^{30}$ cm^3/g$\cdot$sec^2

In the nucleus we assume $\rho_A = \rho_B = \rho$. From (34) it follows

$$G_s = G_0\rho^2\qquad(36)$$

From (36) it follows the formula of the particle radii

$$r = 1.55[m(\text{Gev})]^{1/3}\ \text{jn},\qquad(37)$$

where 1 jn$=10^{-15}$ cm and m (Gev) is the mass of the particles.

From (37) it follows that the proton and neutron radii are 1.5 jn[4,10].Pohl et al measure the proton diameter 3 jn[11].

We have the formula of the nuclear radii[12]

$$r = 1.2(A)^{1/3}\ \text{fm},\qquad(38)$$

where 1 fm$=10^{-13}$ cm and A is its mass number.

It shows that (37) and (38) have the same form. The particle radii $r < 5$ jn and the nuclear radii $r < 7$ fm.

Similar to equation (10) we define the tachyonic momentum of a string length $\overline{x}_0$ [1,4].

$$\overline{P}_0 = \lim_{\substack{m_0\to0\\ \overline{u}\to\infty}} m_0\overline{u} = const,\qquad(39)$$

where m_0 is tachyonic string rest mass.

Since $\overline{u}\to\infty$ and $t=0$, tachyonic string has no rest mass and no rest time, it shows that tachyon is unobservable, that gravity is action-at-a-distance and gravitational wave is unobservable.   If quantum teleportation, quantum computation and quantum information are the tachyonic motion[13], then they are unobservable.

A new universe model

From above we suggest a new universe model. The universe has no beginning and no end. The universe is infinite, but it has a centre consisting of the tachyonic matter, which dominates motion of the entire universe. Therefore the universe is stable…..In the sun there is a centre consisting of the tachyonic matter, which dominates motion of the sun system. In the earth there is a centre consisting of the tachyonic matter, which dominates motion of the earth and the moon. In the moon there is a centre consisting of the tachyonic matter, which dominates motion of the moon. In atomic nucleus there is a centre consisting of the tachyonic matter, which dominates motion of the nucleus. Therefore atomic nuclei are stable.

Conclusion

Special relativity is the tardyonic theory. Einstein pointed out that velocities greater than that of light have –as in our previous results-no possibility of existence [14], which could be wrong. But gravitation is the tachyonic   theory and an action-at-a-distance.

What is gravity? Newton wrote, "I have not been able to discover the cause of those properties of gravity from phenomena, and I frame no hypotheses …". Einstein's theory of general relativity answered Newton's question: mass causes space-time curvature which is wrong. Gravity is the tachyonic centripetal force.

Where did we come from? Where are we going ? What makes up the universe? These questions have occupied mankind for thousands of years. Over the course of history, our view of the world has changed. Theologians and philosophers, physicists and astronomers have given us very different answers. Where did we come from ? We answer this questions this way $\overline{m} \rightarrow m$,tachyons $\rightarrow$ tardyons, that is gravitons can be converted into the electrons and positrons which are the basic building-blocks of particles. In this model Universe there are no quarks and no Higgs particles. Where are we going? We answer this question this way $m \rightarrow \overline{m}$, that is the tardyons produce tachyons. The tardyons and tachyons make up the Universe.

Jiang found a gravitational formula[3] : $\overline{F} = -\overline{m}c^2 / R$, where $\overline{m}$ is the tachyonic   mass. In 2004 Jiang studied the Universe expansion and found $\overline{F} = -mc^2 / R$, where m is gravitational mass converted into by tachyonic mass $\overline{m}$.

The author thanks Yong-Shi Wu to put forward this research.

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美国欧洲社会衰落与危机的根本原因及其解决方法

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摘要: 美国及欧洲发达国家制造业严重衰退、财政庞大赤字、外贸巨额逆差、就业市场低迷、货币贬值、信用危机、金融危机，希腊等国家的频临破产，等等，面临严重的危机。美欧社会衰落与危机的问题根本原因就是社会运作成本的失控，这样就导致了美欧物质生产 (财富创造) 的小数量低效率高成本及高支出。
[万宝. 美国欧洲社会衰落与危机的根本原因及其解决方法. *Academ Arena* 2012;4(7):41-44] (ISSN 1553-992X).
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Keywords: 美国；欧洲；衰落；社会运作成本；物质生产

美国及欧洲发达国家的衰落已经是不争的事实。制造业严重衰退、财政庞大赤字、外贸巨额逆差、就业市场低迷、货币贬值、信用危机、金融危机，希腊等国家的频临破产，等等，经济衰退与危机显而易见。

对于这严重的危机，从众多的专家学者，到富翁政要，及人民大众，人们进行了大量的分析与关注。但是，绝大多数的分析与关注没有触及其根本原因所在。所谓经济过度自由主义，华尔街错误操作，等等，都是原因，但不是根本。

其实，美国欧洲社会衰落与危机的问题根本问题就是一个词：缺钱，其根本原因就是社会运作成本的失控，这样就导致了美欧物质生产 (财富创造) 的小数量低效率高成本及高支出，内在的原因来自人们贪婪的本性。

美国政府财政赤字连续第四年破万亿美元，其中 2011 财年的财政赤字约为 1.3 万亿美元；2010 财年为 1.29 万亿美元；2009 财年一度达到创纪录的 1.41 万亿美元。国财政部：到 2011 年 5 月 16 日，美国债务已达法定的 14.29 万亿美元上限。可见，从美欧国家来讲，这几年是支出大大超过收入，当然是越来越穷，是衰落及危机。从美国国民来讲，也是失业率居高不下，房贷危机等，入不敷出，结果也是向贫穷方向发展。

为什麽美国是支出大于收入呢，就是使用掉的物质财富大于了所创造的物质财富。美国人也是人，美国人同样希望工作挣钱。但是人工作生产的产品必须能够卖出去，这样的工作生产才能继续。美国人还是人，希望其单位工作生产能挣更多的钱。所以，美国的工作人员就尽量的追求较高的工资收入及投资效益。银行的高管年薪数千万美元，普通的劳工也要年薪好几万美元，大于很多国家（比如中国印度）的劳工年薪几十倍。这样的一个直接结果就是产品成本的增加。比如生产一打同样的圆珠笔，中国生产的成本是

50 美分，卖 80 美分还盈利，但是美国的生产成本可能是 250 美分，卖 200 美分还赔钱。即使是美国人，无论是高官还是百姓，买东西首先看价钱与质量，中国产品质量一样价钱便宜，美国人当然也是买中国的产品，这样美国的生产就不能进行，就只能买没有卖，劳工同时失业。

我们知道，社会的发展状况首先决定于生产力的状况。当前美欧的生产力状况，是全世界最强的。但是，拥有如此强盛的生产力，却连满足自己需要的生产能力都没有，还要通过巨额的财政赤字及借债来度日，究其原因，就不是天灾，而是人祸，是欧美社会中官僚及各种人的贪婪与胡来所致。其实，现在人类社会的生产能力，已经远远的大于了基本消费需求。尤其是美国及欧洲，这几百年积累的科技成就及生产力是人们有足够的能力来造出满足自己需要的东西。巨额的赤字及借债完全是太过贪婪与好吃懒做所造成。

面对经济全球化的现实，无论任何国家，都必须正视社会运转成本。

以房地产问题为例，从客观上来讲，房地产价格本身就不应该成为重要社会问题。房地产价格的高低对社会总财富量不构成影响，而只是影响社会财富占有的分配问题！房价高了，卖方多得钱，房价低了，买方少出钱。房子还是同样的房子，房价的高低只是钱在买卖双方的分配问题。本来前些年美国房价就涨的过快。从市场经济角度看，为什麽五年前二十万买的房子，即使五年后的今天市值曾达到六十万，新的价钱就不能低于六十万买？就不能随着市场的波动与供求关系而降回二十万？如果说房市的低迷使一些人失去了财富，相应的结果应该是同样数量的买主读到了同样数量的财富，这算甚么危机呢？重要的是，房价过高升高了该社会产品生产经营的成本，无论哪个国家与地区，无论是美国欧洲还是中国印度，都应该正视这个问题。

美国衰落的问题其根本是财富创造相对低迷的问题。一个社会要繁荣发达，首先是要保证巨大的财富创造能力与实际的创造结果，其次是高效的流通（其实流通也是社会财富价值存在的一部分），再其次才是合理的分配。而且，这个的巨大的财富创造过程还应该是高效率低成本。尤其是在一个相互竞争的环境中，财富创造的大数量高效率低成本是决定成败的关键所在，这简单的道理与现象在中国战国时期秦国的崛起及欧洲工业革命中等一再证明。而现在的美国，比如和中国比较，其物质生产财富创造显然是相对的小数量低效率高成本。中国的工作人员一个小时的成本可以低于一美元，美国最低工资比如纽约州必须不低于 7.15 美元，即美国的劳动力成本是中国的十倍以上。加上房屋场所等费用较高的因素，美国的生产成本明显极大的高于中国等国。而且，无论政治体制如何，在一定意义上现在的中国经济是比欧美还更为资本主义化更自由化，生产能力更大效率更高。在这样物质生产财富创造的小数量低效率高成本情况下，美国还要维持较其他国家大出很多倍的军费战争费及行政费的庞大支出，美国的衰退自然不可避免，并已经开始。这才是美国衰退的根本原因。

这里要讲一下，最低工资法本身就是世界上最不讲理法规之一。首先，最低工资法不公平，是对没有工作的人不公平。如果一个人找不到或没有能力完成每小时 7.15 美元的工作，而受能力或机会的限制，他（她）可以为某一个公司工作但每小时只能创造 7 美元的价值，这个公司老板怎麼办？让他（她）为这个公司工作但每小时依法给 7.15 美元？这样他（她）为公司每工作 1 小时，公司亏损 0.15 美元。公司显然不能进行这样的亏损性经营。如果公司让他（她）工作但每小时发 7 美元，即使公司一分钱不赚，还违犯劳工法。这样公司只好不雇佣他（她）工作，其结果首先就是他（她）被劳工法剥夺了工作权利和机会。虽然他（她）不能工作或许对其他劳工可能会有好处（劳工竞争），但对他（她）而言即使每小时挣 7 美元当然也比没工作好。第二，最低工资法限制了一些人的工作权利与机会，相应的就限制了社会财富的创造数量。一个人，你不让他（她）工作创造社会财富，但又不能杀死他（她），他（她）还是要消耗社会财富以维持生存。第三，美国纽约这里规定最低工资每小时 7.15 美元，但你不能要求其它国家地区作同样的法律规定，尤其是在现在全球化的大形势下，美国的生产成本必然较高，产品竞争力必然较低。美国很多企业搬到中国印度墨西哥进行生产，也

就不足为奇。产品竞争力低及少产多支的后果，使衰退成为自然。

还有，就是典型的欺行霸市的法律规定人每星期最多只能工作 40 小时，否则要多出这费那费比如超时工资费等。工作是每一个自由人最基本的人权之一，使用自己的时间工作生活是天经地义的天赋人权。每周共有 168 小时，凭什麼规定劳动者每周只能工作 40 小时，否则就要一堆附加条件？去问一问美国那些制定法律执行法律的总统州长议员们，他（她）们有哪一个每周工作少于 40 个小时？竞选也是工作。美国总统奥巴马每周工作有没有超过 40 小时呢？奥巴马为了自己的竞选利益每星期工作远远超过 40 小时，平民百姓为什麼就不能为了多挣些钱每星期工作远远超过 40 小时？只要雇主雇员共同同意，并且没有强迫或欺骗，人完全没有必要一定要限制每周工作少于 40 小时或规定最低工资。重要的，限制人们的工作时间，显然是社会人力资源的浪费，也是社会（比如美国）竞争力低下的重要因素，是衰退的重要原因。

这里提供一个网上看到笑话，一定程度上反映了美国物质生产问题严重的事实。美国纽约州前州长斯皮策在任纽约州司法部长时，曾因大力整顿华尔街的不法潜规则而名声远扬，当时有人甚至预测他可能会在未来问鼎白宫。后来他因为性丑闻下台后，有人仿照他的口吻写了下面这段搞笑文字："美国联邦政府要给我们每人寄来 600 美元的税收回扣来刺激美国经济，但我们却为怎么花费这笔钱犯难。要是把钱花在沃尔玛超市吧，钱就会被中国人赚走了；要是把钱花在加油站吧，钱就会被阿拉伯人赚走了；要是把钱花在计算机上吧，钱就会被印度人赚走了；要是把钱花在买水果上吧，钱就会被墨西哥、洪都拉斯和危地马拉人赚走了；要是把钱花在买好车上吧，钱就会被德国人赚走了；要是花钱买没用的废物吧，钱就会被台湾人赚走了。。。。。。所有这些途径都不能把钱留在美国刺激美国经济。要把钱留在美国，唯一途径就是把钱花在买女人和啤酒上，因为只有他们才是美国仅剩的本国产品了。我已经尽了自己的力，并在此感谢大家的帮助"。----艾略特 斯皮策 (纽约州前州长)。

美国纽约 2012 年 6 月左右的皇后区法拉盛至曼哈顿中国城一元大巴的流产，就是美国压制竞争保护高价高成本的一个典型事例。纽约的地铁及公共巴士由庞大的纽约捷运局经营，票价几年来不断提高，至今地铁月票已经涨至 104 美元，单程价也已涨至 2.25 美元。运转于皇后区法拉盛至曼哈顿中国城的小巴，单程票价 2.5 美元。但是，中国国内的公交车单程票价是 0.5 至 1 元人民币，

相差十多倍。公交车的价格是构成社会运转成本的重要部分，美国高昂的公交车价格当然是美国商品生产成本较高竞争力低的一个因素。纽约皇后区法拉盛至曼哈顿中国城的一元大巴，如果能够被容忍，并促使捷运局地铁及普通公交降价，将为居民节省公交费用做出贡献，从而节省纽约社会运转成本做出贡献。但是，这样的竞争将会损害捷运局本身的商业利益，将会危及捷运局职员及高管的高新及福利。最终的结果是纽约交通局宣布一元大巴为非法营运。

面对科罗拉多的枪击死伤，美国两位总统候选人奥巴马及罗姆尼都不提改变枪支管理。美国民间拥有枪支 2 亿 7 千万，2010 年就有 3 万多人死于枪击，同时造成巨大的社会财富损失及增加社会成本。其实，当代美国这样一个现代化国家，完全没有必要允许民间拥有枪支。面对如此巨大社会伤害与社会成本，政客们却回避禁枪，这是美国社会运转不良的势力之一。

美国医生的特别高收入及药商与医疗机构的高额利润，是以社会的高额医疗费用为代价，客观上极大地增加了社会成本。

美国体育明星年薪千万美元，有人讲这是他们挣来的，是劳动所得。其实，他们的收入最终还是来自社会其他的劳动者，他们的收入越高，此社会所生产的产品成本价格就相应的高，直接的降低了产品竞争力。

美国的监狱，关押了百万的囚犯。监狱里的囚犯在社会上曾经犯罪并造成社会财富损失，收押了还不用劳动而是被社会养着。其实，最好的办法是实行中国的劳动改造，在不违反基本人权的基础之下，让囚犯们尽可能的进行劳动，生产尽可能多的产品。让囚犯们无薪工作也是他们对犯罪时给社会造成破坏的补偿。美国社会急缺钱啊。囚犯们劳动创造的产品可以以更具有竞争力的价格卖出，也使社会得到了财富-钱。

美国社会的一个很大的支出就是军费开支，也使美国社会的一个沉重的社会经济负担及财政赤字的重要因素。军队不能够取消。怎么办？中国自古以来就有军垦的经验，比如远至诸葛亮的军垦，近至南泥湾大生产及农垦建设。美国社会承受着全世界最大的军费负担，同时拥有全世界最大的军事技术、装备、作战与生产能力。如果能够在保证基本的军事作战能力的基础之上，参考中国军垦及军转民的经验，参照中国军队参与建设及救灾的经验，充分利用军事资源为民用服务，为增加社会财富及提高国际经济竞争服务。

美国政客议员们面对 2012 伦敦奥运会上美国运动员身穿中国生产的运动服的事实，大加鞭笞，疾呼要求美国运动员不用中国制造而用美国制造，甚至呼吁烧掉中国制造的运动服，改穿美国制造。什么保护美国服装工业了、甚至国格了，大肆渲染。其实，其中关键的因素不是工业保护，也不是国格问题，而是美国的运动服生产成本太高，由此价格必然很高。美国政客议员们一方面宣扬并立法保证劳工甚至高官的高额薪资福利，这就自然地造成了美国企业生产的产品的高成本。但是，另一方面他们又要求美国用户购买美国产品。这是自相矛盾，不切实际的。其中的原因就是政客议员们首先顾及的是自己的自身利益，既要讨好选民，又要讨好企业。

美国与中国及各个国家都有很多对社会发展及存在不利的方面，需要改进。比如，纽约几百年历史， 800 多万人口， 每天大街上的流动人口就超过百万。但是，整个纽约市，几乎没有公共厕所，而且如此没有公共厕所历时几百年之久，竟然没有任何的社会舆论、政治人物或任何媒体加以关注，实在是难也理解。

美国大部分的城市，比如纽约，立法不准使用电动自行车或电动摩托车。其实，电动自行车或电动摩托车是很能过降低生活与生产成本的交通工具。不允许使用电动自行车或电动摩托车，直接的结果是增加社会运转成本。

在美国，对小商贩的严格控制也在一定程度上增加了社会成本。

所谓"制造在美国"的计划及新法律提案，也只是贸易保护主义的思想。提高美国竞争力及就业率的根本方法，是降低生产成本、降低产品价格及提高产品质量。

总而言之，美国欧洲衰退的根本原因是财富创造的小数量低效率高成本及财富使用的高支出，其解决办法自然是财富创造的大数量高效率低成本及财富使用的低支出。

美国有着绝对优势的生产力技术、生产工具、物质及人才资源等。美国当前最应该做的是以尽量低的成本生产尽可能多的产品，尽可能的提高自己的国际竞争力。其中有很多事情可以做，比如适当的降低人工成本及各种社会成本，利用社会资源，提高国际竞争力。

面对全球化的事实，任何一个国家或地区，保持及提高竞争能力的根本因素就是尽量的降低社会运转成本。美国欧洲现在社会衰退的根本原因就是社会运转成本过高。中国的发展也一定要以美欧的衰退为鉴戒，继续保证财富创造的大数量高效率低成本，并争取尽可能的低支出。

以下是美国政府借款上限历史数据的总结（单位：10 亿美元）（表一）

表一。美国政府借款上限历史数据的总结

统计日期	债务上限	债务上限相当于 GDP 比例
2011 年		
2010 年	14,290	92.1%
2009 年	12,100	84.1%
2008 年	10,610	70%
2006 年 3 月	8,965	70.3%
2004 年 11 月	8,184	69.2%
2003 年 5 月	7,384	68.9%
2002 年 6 月	6,400	61.9%
1997 年 8 月	5,950	71.0%
1996 年 3 月	5,500	72.1%
1993 年 8 月	4,900	74.1%
1990 年 11 月	4,145	70.9%
1989 年 11 月	3,123	56.5%
1987 年 9 月	2,800	58.7%
1986 年 8 月	2,111	47.7%
1985 年 12 月	2,078	48.1%
1984 年 10 月	1,824	45.8%
1984 年 7 月	1,573	40.2%
1984 年 5 月	1,520	39.9%
1983 年 11 月	1,490	41.5%
1983 年 5 月	1,389	

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America and European social decline and the root causes of the crisis and its solution

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Abstract： A severe recession in the United States and the European developed countries is happening, including. manufacturing and finance huge deficits, huge foreign trade deficit, the job market downturn, currency devaluation, the credit crisis, financial crisis. Greece and other countries are on the verge of bankruptcy, and so on, facing a serious crisis. For the United States and Europe social decline and crisis, the root causes of social operating costs out of control, thus leading to a US-European material production (wealth creation) of the number of inefficient high-cost and high expenses.

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Germination Enhancing Treatments for Conserved Seeds of *Corchorus olitorius* L.

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Abstract: The effects of different seed treatment methods and durations of exposure on germination of conserved seeds of *Corchorus olitorius*, a traditional leafy vegetable consumed in many parts of Africa, were investigated. Seeds were exposed to eight treatments (water at room temperature, water for 17 hours, and four days, water exposed to sunlight for 4hours, water at 100^oc for 5 minutes, water at 100^oc for 10 minutes, concentrated Hydrochloric acid for 15 minutes and pre-chilling for 16 hours). Exposure for seed soaked in water for 17 hours was the most effective treatment for enhancing germination (93.3%), followed by Hydrochloric acid for 15 minutes (85.0%) and water for four days (73.3%). Other treatments were less effective. Therefore, soaking seeds in water at room temperature for about 17 hours may be recommended to farmers and research scientists as a simple, cheap and very effective way of germinating conserved seeds of *Corchorus olitorius*.

1. Introduction

Corchorus olitorius, a wild leafy vegetable with potential for development as a crop is an annual dicotyledonous herb that has been cultivated in India since ancient times (Fox and Norwood 1982; Voster *et al*., 2002). It is one of the leafy vegetables with much use in Nigeria especially in the Western Nigerian axis where it is used mostly in soup delicacies and as a weaning soup for children. The leaves of *Corchorus* are cooked as pot herbs, used in soups and added to salad. Dry leaves are used as a thickener in soups. Previous reports by Ndlovu and Afolayan (2008) indicated that *C. olitorius* is of more nutritional quality in terms of crude protein, iron, calcium and magnesium than cabbage and spinach. The leaves are demulcent, diuretic and tonic which are used in treatment of chronic cystitis, dysuria and gonorrhoea. A cold infusion is said to restore appetite and strength. A fibre (jute) obtained from it have various uses in fibre and paper industries.

Studies have shown that *Corchorus olitorius* among many indigenous vegetable species have sub-optimal germination capabilities that hinder cultivation efforts (Emenger, *et al*., 2004; Modi, 2007). Its seeds tend to show poor germination as a result of mechanical dormancy imposed by impermeable seed coat (Emengor *et al*., Velempini *et al*., 2003). In Botswana for instance, attempts to encourage farmers to cultivate this plant have been fruitless due to poor germination (Velempini *et al*., 2003). Hardseededness is likely to be the most prevalent problem in germination tests for stored seeds, but can be avoided by suitable treatments to the seed covering (Fox and Norwood, 1982). Several studies have been carried out on pre-germination treatments of seeds (Thakur and Sharma, 2005; Farooq *el al*., 2005; Basra *et al*., 2007).

These include hot water, mechanical scarification and acid treatment (Hatmann *et al*., 2002; Velempini *et al*., 2003). Previous studies have shown that chemical seed treatment improved germination and growth under various conditions (Kozlowski, 1972; Anonymous, 2007; Ehiagbanare and onyibe, 2007; David and Midcap, 2007; Kak *et al*., 2009). Nkomo and Kambizi (2009) reported that pre-chilling followed by exposure to temperature higher than 30^oC encourages germination of *C. olitorius* seeds. Some of the methods may be unfeasible for small scale farmers as well as some laboratories due to the danger of using acids as well as unavailability of controllable temperature baths.

Maintaining good germination percentage and vigour is the most important function of seed storage. Therefore, the objective of this study is to find simple and effective seed treatment methods for breaking of dormancy in conserved seeds of *C olitorius*.

2. Materials and Methods

The experiment was conducted in the Seed Testing Laboratory of National Centre for Genetic Resources and Biotechnology (NACGRAB), Moor Plantation Ibadan, Nigeria. Seeds of three accessions (NHGB/09/141, NHGB/09/142 and NHGB/09/143) of *Corchorus olitorius* conserved for 2 years were collected from the short term Gene bank (20^oC, 40% RH) of NACGRAB. The seeds were kept in ambient temperature for 24 hours to acclimatize. 120 seeds were placed in a 200ml beaker and 50ml of concentrated Hydrochloric acid poured unto the seeds. After 15 minutes, the acid was drained off and the seeds were rinsed thoroughly and severally with tap water. Other *C. olitorius* seeds were subjected to the following treatments: Seeds pre-chilled (-20^oC) for 16

hours; soaked in water for 17 hours, soaked in water for four days, soaked in water and exposed to sunlight (by placing by the window edge) for 5 hours, soaked in water at 100°C for 5 minutes, water at 100°C for 10 minutes, Hydrochloric acid for 15 minutes and seeds rinsed in water as control. Pre-germination treatments were synchronized in such a way that the seeds were sown at the same time.

After the pre-germination treatments, seeds were sown in closed plastic rubber containers lined with two layers of tissue paper. 40 seeds were used for each treatment and laid out in a randomized complete block design of three replicate. Only the treatment involving exposure to sunlight was restricted in this design. The number of germinated seeds was recorded after 7 days. Data was subjected to Analysis of Variance and significance difference among the means separated for Tukey's Standardized Range (HSD) at P≤0.05. Percentages were also calculated for viability.

3. Results

Analysis of variance shows a very highly significant (P<0.001) difference among the eight treatment means with Treatment 1 having the highest germination across the three genotypes (Table 2). However this was not significantly different from Treatments 2 and 3. The worst germination percentage was recorded for Treatment 8. There was however no significant difference for germination among the three accessions Table 1 and 2.

Again, highly significant (p<0.001) interaction was visible among the eight treatments and three accessions (Figure 1). Soaking in water at room temperature for 17 hours and 4 days as well as acid scarification with HCl were very promising over the other treatments (Table 2). Hot water treatment produced a marginal germination result (Table 2).

Table 1. Analysis of variance for germination rates in three accessions of *Corchorus olitorius* subjected to eight treatments

Source	Sum of squares	df	Mean squares	F	Sig.
Treatment	6711.111	7	958.730	33.544	.000
Accession	140.394	2	70.197	2.456	.097
Treatment*Accession	1917.390	14	136.956	4.792	.000
Error	1343.333	47	28.582		
Total	41947.000	70			

Table 2. Accession and treatment interaction for seeds of *Corchorus olitorius*.

| Treatments	Germinations			Means for treatments
	NHGB/09/141	NHGB/09/142	NHGB/09/143	
Water 17 for hours	34	40.00	37.33	37.11[a]
Concentrated HCl for 15 min.	24	36.67	32.00	30.89[a]
Water for 4 days	30	32.00	26.00	29.33[a]
Water in sunlight for 8 hours	34	26.00	16.00	25.33[ab]
Pre-chilled for 17hrs	20	16.67	14.67	17.11[c]
Water 100°C for 5 min.	04	12.00	26.00	14.00[c]
Control	06	10.67	10.00	8.89[cd]
Water 100°C for 10 min.	02	6.00	12.00	6.67[d]
Means for accessions	19.25	22.50	21.75	
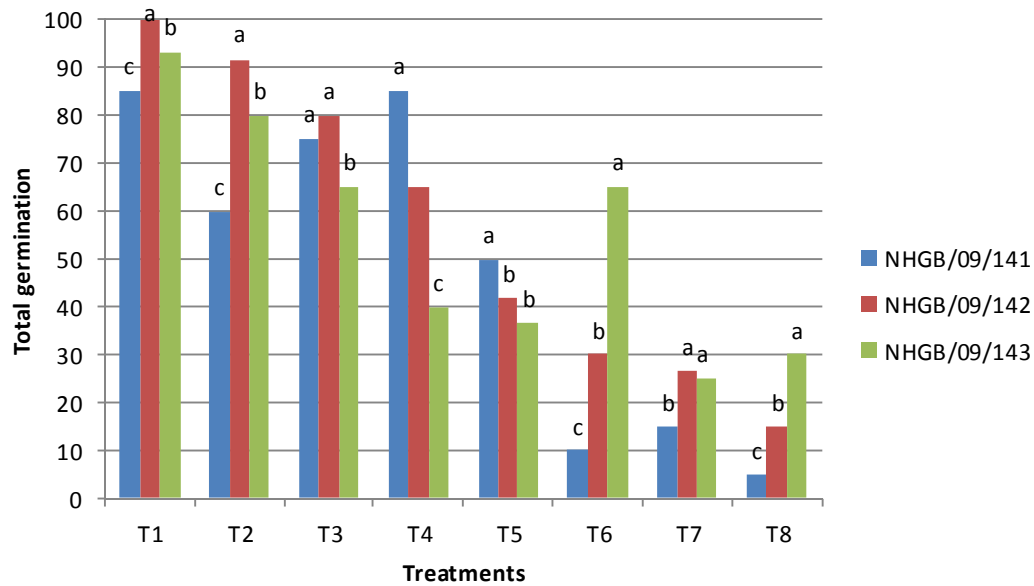
Figure 1. Interaction effects among eight different treatments and genotypes on germination percentages of *Corchorus olitorius* seeds. T1-seeds soaked in water for 17hours, T2- seeds soaked in concentrated HCl for 15mins, T3 – seeds soaked in water for 4 days, T4 – seeds soaked in water and placed in sunlight for 4 hours, T5 – seeds pre-chilled for 17hours, T6 – seeds soaked in 100°c water for 5mins, T7 – control, T8 – seeds100°c water for 10mins. Bars with different letters within the same cluster (T1 – T8) are significantly different at 5% level of significance Tukey's standardized range (HSD).

4. Discussion

This study shows that soaking seeds of *C. olitorius* in water for periods of 17hours and 4 days significantly increased the germination percentage. Most authors reviewed reported hot water treatment. However it has been shown that ordinary water treatment for a longer time may produce a better result. Chemical scarification of *Corchorus* seeds using hydrochloric acid significantly increased germination percentage. Previous studies have shown that chemical seed treatment improved germination and growth under various conditions (Kozlowski, 1972; Anonymous, 2007; Ehiagbanare and Onyibe, 2007; David and Midcap, 2007). Basra *et al*., (2007) reported that seed priming allows for some of the metabolic processes necessary for germination to occur without actual germination of seed. Several authors (Hatmann *et al*., 2002; Velempini *et al*., 2003; Emongor, *et al*., 2004; Mavenghama and Lewu, 2012 have reported the acid scarification of *corchorus olitorius* seeds using Sulphuric acid , but literature on the use of Hydrochloric acid is rare or even non-existent till now. Partly successful dormancy breaking treatment of exposing plants to 25°C in light, 8h/d has been reported by Singh, *et al.,* (1972). Pre-chilling for 17 hours significantly increased germination over the

control but was not better than other treatments. Contrary to the study that *Corchorus* seeds show a high degree of dormancy which can be broken by means of hot water treatment (Schippers *et al*., 2002), in this experiment seeds subjected to pre-chilling conditions showed germination significantly better than those exposed to hot water treatment (100°c for 5min). Pre-chilling has also been reported to cause lethal effects on viable seeds (Ren and Tao, 2004) while other studies have implicated it in dormancy breaking of viable seeds and enhanced germination of many species (Baskin *et al*., 2001). This result agrees with the report of Nkomo and Lmbizi (2009).

Hot water treatment did not fare very well as reported by many authors ((Hatmann *et al*., 2002; Velempini *et al*., 2003). The poor result in hot water treatment may be due to the seed size. Mavengahama and Lewu (2012) suggested that heat treatment killed small seeded genotypes. The germination in the untreated seeds of *Corchorus olitorius* was generally low. This low viability shown by the untreated accessions agrees with the report of Rao *et at*., (2006) that unlike cultivated species, seeds of wild species are generally dormant. However, this also suggests that some *C. olitorius* seeds were able on their own to

overcome the dormancy and may elucidate their

5. Conclusion

Seeds of Corchorus olitorius like other wild vegetable exhihibit dormancy imposed by hard seededness. Results obtained from this experiment indicate that the pregermination treatment of corchorus seeds by soaking in water for 17 hours, 4 days and acid scarification for 15 minutes enhanced germination of the seeds. Hence, it is recommended that farmers as well as research scientists keen on Corchorus cultivation soak their seeds in readily available water for 17 hours before planting.

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