

The new concept to understand how the basic universe work

**Abstract:** Introduce a new concept of what is force and what is motion, I will use a new kind charge call MS charge to represent motion MS charge only interact with mass, when MS charge flow into mass cause mass to accelerate, MS charge is fill up all the space, when MS charge density change it create gravity. MS charge is try open space, electromagnetic charge is try to close space. Quantum mechanic mainly describe by electromagnetic charges, but gravity force is only effected by MS charges, so try to quantize gravity will not work, that is why by many years of hard work the quantum gravity still cannot achieved.

Today most physics think we have all the basic concept and knowledge to understand how the universe work, from Newton law to Lagrange's equations the classic mechanic is full developed and it is in all mathematic expression, all experiment prove the concept is right. Maxwell equation developed later can explain all electrical and magnetic phenomenon, and it is in a full and beautiful mathematic expression, although these equation can explain most electro magnetic phenomenon, but there are some mathematic expression can not be real understand in a intuitive way, for example the vector potential  $A$ , it can not be measured directly, it is only a mathematic term not link to any phenomenon to be seen directly. In quantum mechanic there people have to use complex equation, but why the imaginary number have to used in there can not be full explained and understand, the only explain is the complex equation its work and prove by all experiment. In standard model people have to use symmetry and invariant concept but not full understand why symmetry invariant works. From all these question I think we need to explore some new concept into our basic understanding of how the universe work this way.

I want to start with the very basic concept of motion, what is motion. Every people know motion is something that move in space, Motion is absolute or relative if you ask a physics they will all say motion is not absolute you need to select a reference frame to express motion. Einstein relativity seems to say every thing is relative, you will see things differently in different reference frame, nothing is absolute, but light speed is same in all different reference frame, no change for all observer that mean light speed is absolute. In the classic mechanic straight motion is need a reference

frame, but rotation is same for all inertia reference frame. Newton bucket is a long last question, rotation is relative to which reference frame, over 300 years many people try to gave some kind explain but until now there still not a firm answer, seems when straight motion turning in to a rotation the reference frame is loose it grasp. For me why there are two different quantity one is need reference to decide, one is not, seems no body understand it, there is a basic concept ambiguous need to rethink about.

What is motion, physics think motion is an object move in space time, space and time is a back stage, motion is some thing play on that stage, in the outer space if you can not see any stars you cannot say I am is moving or stationary, so if there are no space time stage, motion is no meaning, this is the basic concept every body agree and understand it, but today space time is doomed start to gain acceptance by many physics, if space time is doomed how to define the motion no body every think about it, now I want to try give motion a new concept, from this new basic concept most frontline unsolved physics question may be easy to understand.

A new definition of motion.

1) Motion is a kind of charge I call it MS charge, it is not a particle, it may like some kind virtual particle in the field theory, it can charge to or say join to a mass, when mass charged with MS charge it will show a charge potential, the charge potential shows as the velocity of the mass, velocity is a vector have a direction, so it will be call the motion vector potential or call MS charge potential, (not same as the electromagnet vector potential) . Charge potential is a relative only can compare with other charge potential.

2) Force is defined by the Newton second law  $F=ma$ , but Newton never give clear meaning of what force really is. (Feynman lecture on physics section 12-1 What is a force). Now I want to gave force a new definition and meaning, force is transmit MS charge between two mass body, the acceleration is charge potential rate of change. Mass is mean how much charge can goes in to a mass body and hold it, if a same amount charge flow in to a small mass body it shows higher charge potential, the same amount charge flow into a big mass body will shows lower charge potential. The highest charge potential is the light speed  $C$ , a mass body can not hold more charge than this  $C$ , I would like to say charge potential can not go to higher than  $C$ .

3) MS charge is like virtual particle, it has no mass only have the charge potential  $C$  and move in all direction and it is not only charge to mass its fill

up all the space, when two opposite MS charge interact with a mass the mass charge potential will not change. When more MS charge from one side of a mass body flow in to the mass (unbalance MS charge flow), the mass body charge potential will change.

4) MS charge is like a field (virtual particle field), and it fill up all the space, this concept is very close and same to the old concept aether, and the new concept as vacuum energy, quintessence, or the dark energy and Higgs field, MS charge only interact with mass body and charge to the mass, MS charge not interact themselves in the empty space except react inside a mass.

5) When two opposite MS charge flow in and interact with in a mass body it will create heat or say create a photon fly out dissipate in to the environment. Some opposite MS charge interact in side a nucleus can join and create mass, when MS charge joined become mass there will be no heat create, no energy dissipate. If there are very big mass stack together like earth and sun, big amount of MS charge will flow in to the mass some interacted charge can join become heat flow out, some become mass then stick with the big mass body, from a outside observer to see it like MS charge flow in and absorb by the big mass body, this charge flow into mass is cause the surrounding space MS charge density change, the result is like the space is sink in to the mass or say space is curved, this charge density change rate if you put into the mathematic equation it will be exactly same as the equation used by Einstein general relativity. From this way of thinking, the MS charge density flow into mass body is not against curved space idea, just a way to explain how space can be curved which way she curves, and the gravity force is create by MS charge density changes from high charge density face to low charge density. If we say space is not empty it fill up with MS charge, how space curved that is how MS charge density changes. An interest concept is for find Einstein equation solution people use perfect fluid (fill up all space) as a conceptual devise help to calculate, actually the MS charge is like a perfect fluid but the charge ( virtual particle fill up space) is not static, it is all moves at light speed  $C$ .

This MS charge density change cause gravity look like the old idea of push gravity theory, Feynman in his lecture on physics has been mentioned about this idea, he think any thing that fill up the space can cause gravity it will create drag for any mass that move straight in the space, but until now we never detect any this kind drag, so that idea cannot be right. The MS charge are no mass move in all direction with speed  $C$ , so any mass in straight

motion will not feel different from forward or backward MS charge reaction, this means no drag will feel by any straight motion.

Now I will try to look into the electric magnetic force, if force is transmit by MS charge how electromagnetic force work, I would like to say the MS charge is try to open space and the electromagnetic charge or say force is try to close space, opposite electric charge is attract each other, the attraction is try to close space between the opposite charges, it like a pull force, the MS charge is a push force it try to open space.

Pull force and push force in the classic mechanic treated with the same mathematic expression only the vector arrow signs is different, at the basic concept level there are no different, only the vector arrow when pull in is face each other, and at push out is against each other, but in the real life or in engineer way of thinking they are very different. A thin steel rod can hold and pull a big weight, but it cannot used push the same big weight start to moves, why the push or pull force have this different character, now I try to use force is MS charge flow and transmit to explain. Push force is a created force in opposite direction try to open the space between the two acting point, pull force is created by try to close space between two acting point, push force is transmit MS charge forward, pull force is transmit MS charge back ward (when the charge transmit direction is opposite of charge vector direction). Electromagnetic force is the main force that try to close space and this close space force it can be hold many MS charge inside an atom and nucleus and made the atom stable.

When two mass body charged with opposite MS charges (open space and off center force) hold (connect) by two opposite electromagnetic charge force (center and close space force) it will interact and show up as spin ( see fig 1), when two MS charge is center and face each other interact will show up as the harmonic vibration, and wave, all this joined open and close space processing now we call them energy.

All energy except kinetic energy is some kind processing, charge flows between open space MS charge and close space electromagnetic charges, after all kind transmitting, processing, the end result is become heat dissipate into the space.

Quantum mechanic is describe how the MS charge want to open space and the electromagnetic charge try to close it, quantum mechanic mainly used wave mechanic to calculate, I would like to call the wave is a processing. Kinetic energy are the single MS charge (in one direction), if not met or join with opposite direction MS charge it cannot do any work or any processing that can convert kinetic energy into heat and other form energy. Kinetic energy is relative, need select a reference frame to decide it value. Rotation

energy, potential energy, and heat energy all do not need a reference frame to decide its value, we can say it is absolute value.

Above I introduced how close space and open space concept can be used to explain what is energy, now I want to go in more depth to analyze how to create, transmit, and convert energy. The basic law says you cannot create or destroy energy. Kinetic energy is relative, not absolute, if you are on the same reference frame with a mass body, then to measure the mass velocity calculate the kinetic energy it will disappear, only with a different charge potential observer on a different reference frame, or say join with opposite MS charge potential then you can create and use the kinetic energy or convert to other kind of energy, like heat or electric energy. Except kinetic energy all other kind of energy will be absolute the same for all observers, you cannot create them only can transmit and convert them to other kind of energy.

Single MS charge can charge a mass body, or say transmit to mass, force is measured and calculated how much charge transmits or flows between the mass body, the whole classic mechanics is devoted to single (not joined or interacted) MS charge and transmits between mass body, calculate how the charge potential, (velocity) change and how the mass body trajectory will go. Rotation is two off-center opposite MS charged mass bodies joined by a pull force, the pull force called centrifugal (close space) force, this force is transmitted by electric force (transmits MS charge backward), or centrifugal force is created by push force caused by MS charge density gradient, then the two mass body charge potential vectors will change direction continuously therefore two mass bodies become rotated around each other. Rotation is not absolute energy, it only interacts with other opposite rotation then it can be completely converted to heat or electric energy.

Now I want to look into potential energy, potential energy is push (open space) and pull (close space) force, joined and confined in an unchanged volume of space or called occupying certain space, like a compressed spring in a box, a spring tries to push to open space, a box tries to close pull back close space, MS charge pushes flow forward, and flows backward by pull force, the charge potential is not changed, so there is no motion, space neither open nor close, energy is stored in the confined occupied space.

In a potential energy stored and closed system, when there is some outside influence causing the push and pull forces not continuously balanced, the charge potential will not stay constant the whole system space will open and close the charge potential changes as motion swings back and forth, from classic mechanics see this is harmonic vibration, at atomic level this vibration is seen as heat.

Heat is interact MS charge(open space) and electric charge(close space) in a certain smallest volume of space, the unit is Planck's constant  $h$ , same amount joined charge in a small volume shows high temperature, when volume go to expand bigger the temperature will go down. Heat is a absolute quantity measure the same for all observer. Harmonic vibration have a certain direction, when all different direction small harmonic vibration join together will become heat. Hard and elastic body is a like all atom joined by closed MS charge hold and balanced by open MS charge in side atom, occupied a certain space, out side direct interaction only cause the MS charge flow in and out the whole body, no heat will crate, the inelastic body is different, when outside MS charge flow in to cause atom or molecular move and crate more harmonic vibration that dissipate as heat.

Work is force time distance by the definition (Joule= Newton x meter), from space open or close point of view the distance is the space between two acting point open or close, if the space not change their will be no work done. Every body know that Work can be all (100%) convert to heat, but heat cannot complete convert to work, no body give a intuition or clear explanation why the reverse is different, now I want try to use MS charge open and close space to explain. Work is done by a signal dimension MS charge (opposite vector) moves in a straight line open space between two opposite contact point, but heat is a multiple direction MS charge expand to all direction (or call complete disorder), you need work only in one direction only one dimension can do the job, but not need all other dimensions motion, why not easy to convert all other dimension (multiple vector direction) motion or charge in to one single direction of charges, because to change all multiple dimension MS charge in to one dimension have to expand the space volume, that heat is contained in the volume, once the volume expand bigger the temperature will go down, use other word is heat only flow from high temperature to low temperature it can convert part of it energy to work. Above I mentioned rotation energy, that is two off center opposite MS charged mass body pull in by close space force, continue change charge vector direction to create rotation, rotation motion is in a two dimension plane with perpendicular axis on the rotation centre. rotation energy is absolute invariant for all inertia reference frame. Spin is same concept as rotation only use in very small mass body and particle, but in principle it is two small opposite MS charged mass hold by close space force(transmit MS charge backward). The spin is same with axis on center, spin is quant sized only have either up or down spin it is the smallest close open space join processing, or the smallest transmit MS charge between mass, it expressed by Planck's constant  $\hbar$ .

Now I want try to find out what is the smallest charge for close space and open space, the smallest negative charge is the electron, what is the smallest MS charge? or we can say what is the smallest force, from classic mechanic point of view force is continued can be any smaller size, but the quantum mechanic say energy is not continued, the smallest energy package is Planck's constant  $h$ , from above I have analysis and conclude, energy is joined close space and open space charges, we know opposite electric charge is attractive try to close space, with a open space MS charge, it will make a package (the transmit charge processing), the close space is electron charge  $e = 1.60 \times 10^{-19}$  Coulomb, here the electric charge is defined by force, same as the MS charge is defined by force, we can use fine structure constant  $\alpha$  to guess the electric charge is  $1/137$  smaller than the MS charge (highest charge potential  $C$ ). Fine structure constant is dimension less only a ratio, people try to guess what the ratio means for a long time, but no satisfy answer until today, I don't have a clear picture to show you how electric charge to hold or transmit MS charge in a small space, that need to do by experiment to fine out, but I can say one virtual photon charge can just hold and join to  $1/137$  of the MS charges, or I can say the ratio of close space force to the open space force is 1 to 137, the photon is a smallest processing of close space open space charge transmit action, light particle is a smallest energy package  $h$  (Planck constant).

When electron rest in a vacuum the surrounding not only have virtual photon but there are MS charge field (vacuum energy field) as will, if two opposite MS charge interact with photon field close space and open space joined in to a small volume of area that is like field excitation become a particle like a photon, otherwise only one field say electric field, if no MS charge field join activate it can not excite to create a particle. Any single direction MS charge flow in to a particle will only change the whole particle charge potential but not change any reaction inside particle, not affect inside space open close charge transmitting processing. From here I want to say some thing about local gauge symmetry, every body know what is symmetry but in mathematic language the symmetry is transformation invariant. Motion is MS charge potential when we transform charge to different potential the inside particle (or group particles) the open close space processing will not change. Joined open space and close space charge is local symmetry, by Noether's theory there will be some conserved quantity that is particles mass and energy, so the single charge flow in to particle (group joined particle) only change charge potential outside particle, not change energy and mass quantity inside. Joined open space and close space charge (processing) in a small sealed volume not interact with outside field we call it mass.

Now I like to sum up the above analysis in to some conclusion.

The universe basic ingredient are contain two kind of charges, one is open space MS charge, the other is close space electromagnetic charge, basic interaction is the processing between the two kind charge. Relative (special and general) is only describe how MS charges interacted, flow and transmit in the processing, there only shows MS charge potential change and charge density change but not include close space electromagnetic charge works.

Quantum mechanic is describe how electromagnetic closed space work, it basically different with signal MS charge density change cause gravity work, so try to use quantum theory to describe the gravity can not work, that is why for so many year's people try to develop a unified quantum gravity theory still not succeed.

The universe is fill up with MS charge, MS charge move in all direction and there are no boundary so it like the MS charge is expand in all dimension, or call it space expansion, this can be explain as the dark energy work.

When MS charge flow in to mass, mass change charge potential show as motion, charge potential is relative, the maximum or highest charge potential is light speed  $C$ .

MS charge is try to open space (push force), electromagnetic charge is try to close space (pull force), when both charges (push pull, close open) interact with in two mass body it will transform charges back and forth between the mass, this charge flow is to crate harmonic vibration and wave. If there no close space charges interact and to join with MS charge, MS charge density change that is only make charge density gradient, no close space action cannot make to a closed energy package, like the photon wave. this is why in many years of hard effort try to fine gravitation wave only recent to detect and find some of the strongest black hole merger gravitational wave or I will call it the space charge density disturb not close packaged wave.

Energy is the processing of interacted open and close space, or say joined open and close space charges, when the interaction confined to a small space like an atom it shows high temperature, when space expend bigger the temperature will drop lower.

Electrical field is the negative virtual photon field, and positive virtual photon field that both try to attract opposite polarity field, and repel same polarity field, or say close space between opposite polarity, and open space between same polarity. Magnetic field is different because you cannot create single polarity magnetic field, so the field line always come back to close on itself, say from north pole to the south pole, that is to says you can never fined an open magnetic field or single magnetic pole. I guess the magnetic

field is a circular electric field, it is two different polarity virtual photon join and circuit each other, when they go out of magnetic material it like a tube, this tube cannot break itself only can back into magnetic material, and back into same place original begin with. In the QCD people use flux tube to describe the color force I think the magnetic tube may same as in the quark confinement use to connect quark inside the nucleus, it cannot break so you can never see a single free quark. Simply to say not joint positive charge virtual photon and negative charge virtual photon create electric field, the single charged open electric field (positive or negative) is dissipative in to the space try to fine and join with opposite electric charges, and joined circular electric field create magnetic field, this tube like joined circular electric field only can close back on itself never dissipative as the open charge field. From mathematic expression shows the magnetic field  $B = \text{curl } A$ , curl of vector potential  $A$  is the magnetic field  $B$ , how potential can be curved?, my view there are two opposite charged virtual photon join and rotated each other crate circular electric field like a tube, this is the magnetic field.

All the above is some kind hypothesis it have to be prove by experiment, then we can say the theory is basically right we can go further ahead, the experiment need first is to prove there are MS charge fill up all the space, and it will interact with mass, when MS charge density all around same there are no charge potential change no motion will create, but if two exact opposite direction MS charge interact inside a mass center it can join become heat, or crate mass, this small amount heat or mass create on the surface of earth is very hard to isolate from surrounding and to measure it, the radioactive decay will be same as two opposite MS charge join inside the nucleus create heat and energy that cause nucleus to break and decay. I think today we should have this kind technology and instrument to do some kind experiment test and to prove there are MS charge fill up all empty space and interact with all the mass. The simple experiment is to use a insulated box keep inside at minus 20 - C and keep the refrigeration at constant capacity for empty box, and than put a big block of precooled to minus 20 - C steel inside the box, if the refrigeration capacity no change wait for long time than to measure the steel block there any temperature change, if the steel block temperature increase but can not fine any heat leak in to the box than we can say this is the MS charge interact with the steel block, if this test proved to be true, may be this kind experiment can be explain where the heat come from inside the earth, earth eject lot heat in to outer space but no confirmed source where all the heat come from, it cannot only from the radioactive

material decay and not only from the sun, so may be the MS charge is another source of heat create inside the earth. The sun internal heat source may part come from MS charge interaction, because there not enough neutrino from the sun if only heat is from the nuclear fusion, this is the other way can explain the sun neutrino problem.

This paper is the first time I write down my idea, because I cannot find any mathematic expression to fit in with this kind joined and separated charge, closed and open space processing. I have heard any theoretical physics paper if no mathematic equation in there no body will read it. I cannot find any mathematic concept or equation suitable with my idea, Only local gauge symmetry can used to express the joined charge and closed space concept, after joined space closed it will become one piece entity, and single charge only can add or charge on top of this piece entity not interact with the inside already joined charge, any outer charge changes, the inside will not effect, this is call the local gauge invariant, it is very important concept in the modern theoretical physics, since Yang-mill theory point out local gauge symmetry is important in standard model particle physics, people found it work, but nobody every deep think why symmetry is so important why it works, no body use joined opposite MS charge and close space concept to explain it, only mathematic concept is transformation invariant, no intuitive kind view and thinking developed. Now I want try open a new door find a new way to look in to this basic physics concept, hope some smart young people can get out the mathematic confinement use a new intuition way of thinking to ahead complete develop this above idea, may be we can make some break through from the existing difficult face by theoretical physics.

This paper is prepared by Jimmy Yang.  
Email address; chiehmei2001@yahoo.com

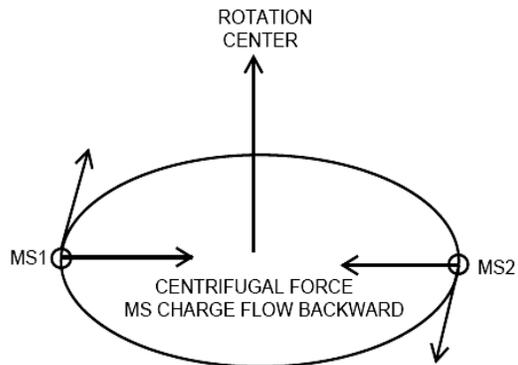


FIGURE 1

Ms1 and Ms2 are two opposite charged mass, and charge vector center not line up (off centre), between the two MS charged mass there are close space force(pull force) that transmit charge flow backward between two mass, than this two mass will rotate around each other.

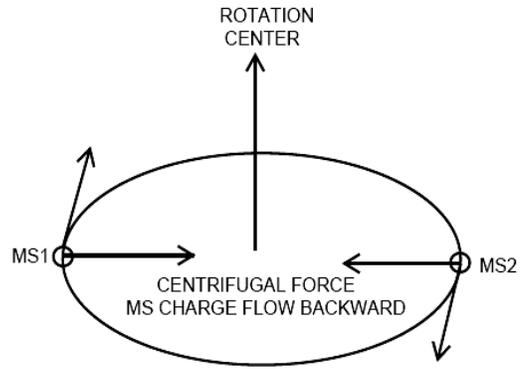


FIGURE 1