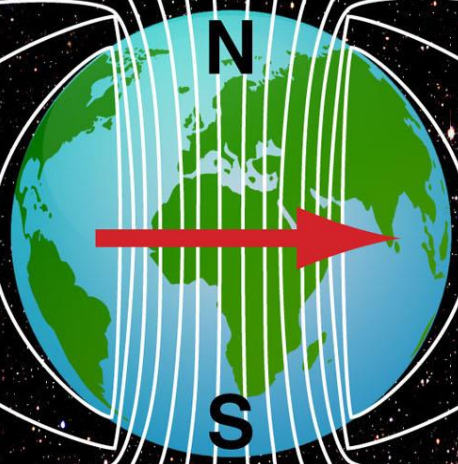
The Cause of Planetary Spin

Based on a Force-based Model of the Universe



Catchments & Creeks

Version 1, 2025

The Cause of Planetary Spin

Version 1, August 2025

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Introduction

In my publication titled *'Electricity and Magnetism',* I present a detailed discussion on how a force-based model of the universe could explain the mechanics of electromagnetism. At the end of that paper I presented my explanation of how planets and stars can develop a spin. The purpose of this paper is to present those findings in a more condensed document.

Through the mechanics of quantum forces, I hope to demonstrate that there is nothing positive or negative about the properties of electrons and protons, and that the actions of magnets and electric motors all result from the actions of repelling forces, which I have titled: 'quantum forces'.

I cannot prove that what I am presenting here is true. However, I do believe that the quantum force model of the universe can be used to explain all aspects of electromagnetism, including the development of Earth's magnetic field, the cause of planetary spin, and the ability of Earth's magnetic field to deflect cosmic winds, and returning spacecraft.

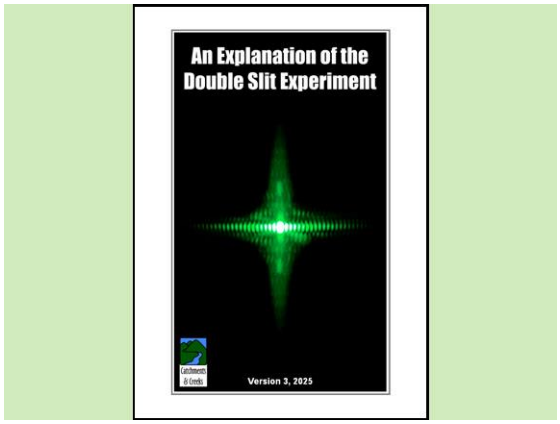
Contents

Why should you trust what I have to say?

Water engineer

Introduction

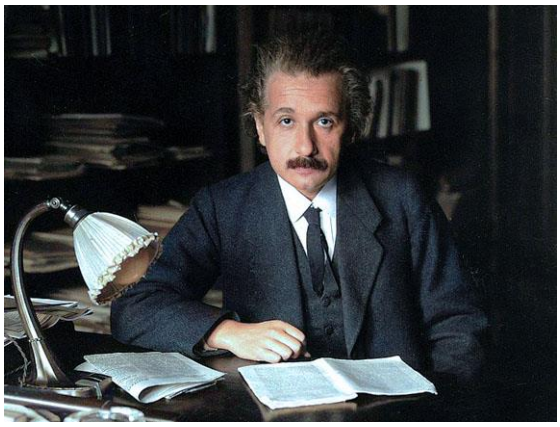
- Just to make things very clear, I am not a scientist, I am a retired civil engineer who specialised in the study of fluid mechanics.
- I have no formal training in electricity or magnetism, in fact, I even had to slow down my typing in order to make sure I spelt those two words correctly.
- So why, WHY, would anyone trust me to discuss electricity and magnetism?
- Let me explain (below) . . .



Double Slit Experiment, Version 3

My knowledge of fluid mechanics

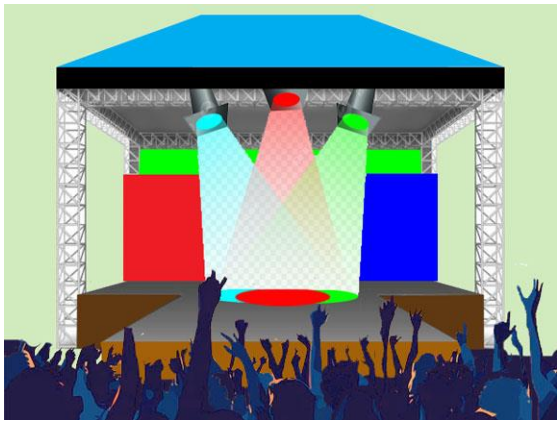
- It is my knowledge of fluid mechanics and wave mechanics that has allowed me to spot errors in Einstein's explanation of light.
- It is also my knowledge of fluid mechanics and wave mechanics that has allowed me to provide a rational explanation to the double slit experiment, and the triple filter experiment (see other documents).
- Oh, and when I say wave mechanics, I mean the mechanics of physical waves, such as ocean waves.



Albert Einstein

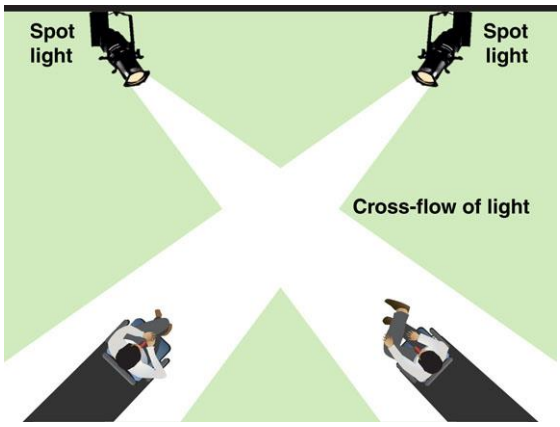
Einstein's explanation of light

- Einstein, like many scientists, describes a photon of light as being a massless particle, and a ray of light as being a form of electromagnetic radiation.
- I believe that this is not correct.
- The one thing that we should all agree upon is that two items of atomic matter cannot pass through each other, but instead will do everything (beyond a nuclear explosion) to pass around each other, thus avoiding direct contact.
- Thus two electrons will avoid direct contact.
- Similarly, if photons were in fact massless particles, then two photons would avoid direct contact.
- Therefore, a ray of photons would not be able to pass, unaffected, through another ray of photons.
- So, why can spot lights at a concert hall pass through each other without any form of interference.
- Light moves as an energy wave, not as a particle wave, just like sound waves and ocean waves.

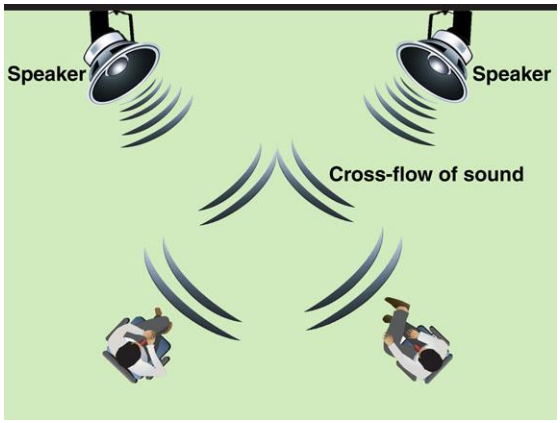


Spot lights

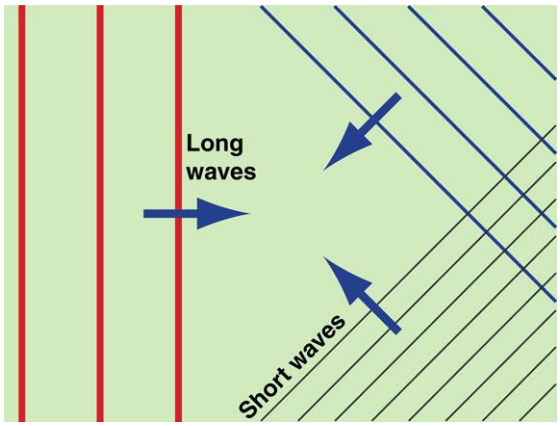
Energy waves



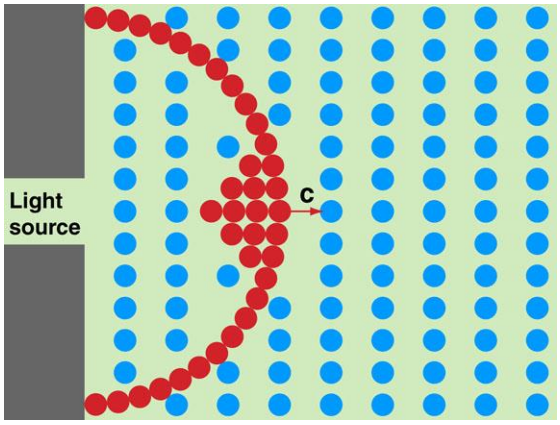
Spotlights



Cross flow of sound waves



Tree sets of ocean waves



A photon shown as a shock wave

Energy waves

- An energy wave is a type of compression wave.
- An energy wave transports only energy, not particles—an energy wave may vibrate particles, but there is no permanent movement of the particles.
- Examples of energy waves include:
  - deep water waves (ocean waves)
  - sound waves
  - gravitational waves
  - and light.

Sound waves

- If two sets of sound waves were to cross paths, then these two sets of waves would pass through each other with little loss of energy, or change in direction.
- This allows us to have a four-way conversation between four people within a tightly-packed social gathering.
- Even though energy waves do not experience a loss of energy or change in direction, energy waves can experience constructive and destructive interference of their energy.

Deep water ocean waves

- Deep water waves can travel great distances across an ocean.
- They are able to travel such distances because they are 'virtual' waves (i.e. energy waves, not particle waves).
- This means they can move through each other without a significant loss of energy or momentum, or a change in direction.
- The seas may look 'choppy', but experienced sailors can recognise the long waves passing through any area.

Photons of light

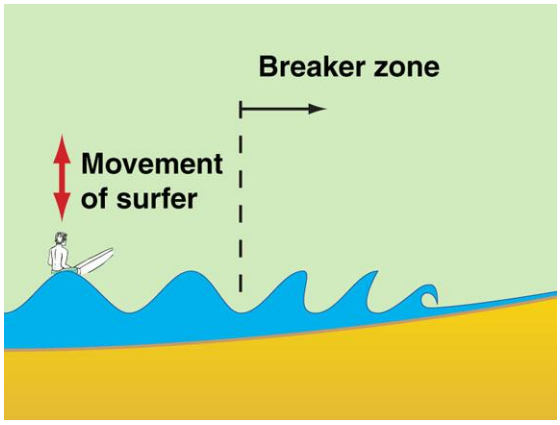
- A photon is believed to be a 'particle' because only a particle can move through a true vacuum, and it is currently believed that 'space' contains large regions of empty space.
- However, what I hope to demonstrate is that 'space' is not empty, but is in fact a continuum of quantum forces.
- I believe that a photon is a compression wave of quantum forces, which moves as an energy wave, which can experience constructive and destructive interference.

Coastal waves

Surfing a coastal (broken) wave

Particle waves

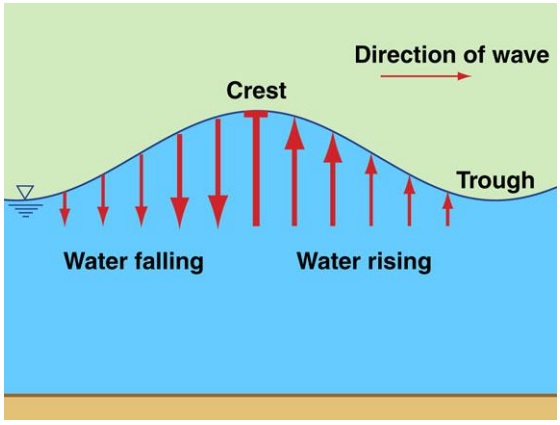
- A particle wave transports both energy and physical matter.
- Examples of particle waves include:
  - broken coastal waves
  - tsunami waves travelling over land
  - weather fronts.
- A particle wave cannot experience constructive or destructive interference.
- Consequently, two surf waves will 'crash' into each other, not pass through each other.



Ocean waves (on the left)

Deep water ocean waves

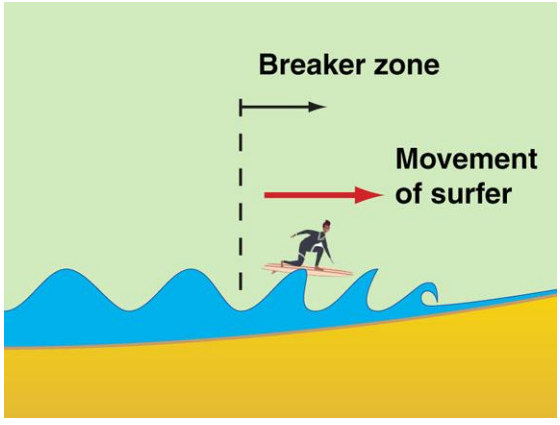
- A deep water ocean wave experiences only virtual horizontal movement, not physical horizontal movement, the same as the 'pointer' on your computer screen; it just appears to move.
- The term 'deep water' refers to the wave length relative to the water depth.
- The 'profile' of an ocean wave moves, and the energy moves, but not the water.
- Ocean waves can experience both constructive and destructive interference.



Wave mechanics

Ocean waves are transverse waves

- A transverse wave has its disturbance vectors moving perpendicular to the direction of propagation.
- Ocean waves are transverse waves.
- A surfer sitting on a surfboard beyond the breaker zone will only move up and down, but not towards the beach (unless there is an ocean current).
- However, light travels as a longitudinal compression wave, the same as sound waves.

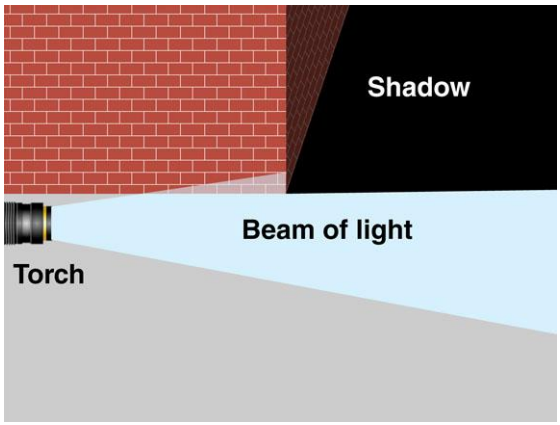


Breaker (coastal) zone (on the right)

Coastal waves are complex waves

- The movement and profile of a broken wave are defined by both the vertical and horizontal movement of the water.
- A broken wave is a particle wave that experiences physical displacement.
- A broken wave cannot experience constructive or destructive interference.
- If light were to move as a particle wave, then it would not be able to demonstrate interference patterns.

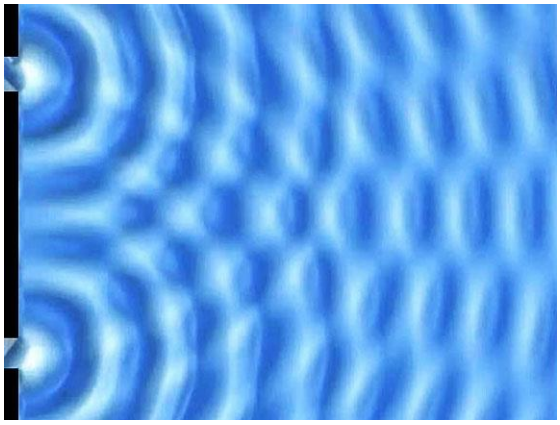
So, what did Einstein believe that was so wrong?



Minimal diffraction of light

A photon

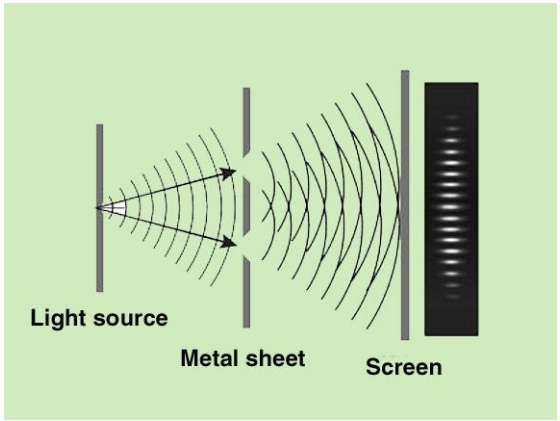
- Einstein believed that a photon was a massless particle partially because:
  - he believed that 'space' contained large regions of empty space (true vacuum)
  - he believed that only a physical particle could travel through a vacuum
  - he was aware of experiments showing that light displays the properties of a physical particle when it travels, such as limited diffraction.



Constructive and destructive interference

Constructive and destructive interference

- Constructive and destructive interference is a property that some waves experience when they 'meet'.
- The action is often displayed by someone generating two sets of 'deep water' waves on the surface of a body of water.
- As the waves cross paths, the waves form a pattern of double-height waves (constructive interference) interacting with zero-amplitude waves (destructive interference).
- But these are all energy waves!



Double slit experiment

The meeting of particle waves

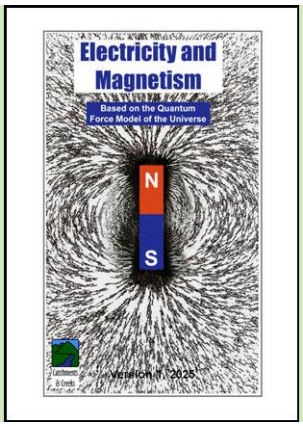
- As discussed on the previous page, if Einstein were correct in defining a photon as being a massless particle, then a ray of light would not be able to experience constructive or destructive interference.
- However, the double slit experiment demonstrates that photons, and rays of light, do experience constructive or destructive interference.
- Therefore Einstein must be wrong; but remember, Einstein was wrong several times during his career.

Einstein's falling man

Einstein's falling man theory

- Let us now consider Einstein's thought experiment about a falling man.
- Such a person is said (by Einstein) to be weightless because they feel weightless.
- In a car we feel the force of acceleration because the force is applied to the outside of our body.
- However, gravity is an internal force, which is applied equally to every atom in your body; consequently, a falling man would never feel the force of gravity.

Related Catchments and Creeks documents



Electricity and Magnetism, 2025

Electricity and Magnetism

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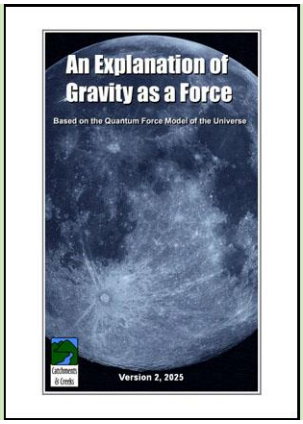

Explanation of Gravity as a Force, 2025

An Explanation of Gravity as a Force – Based on the Quantum Force Model of the Universe

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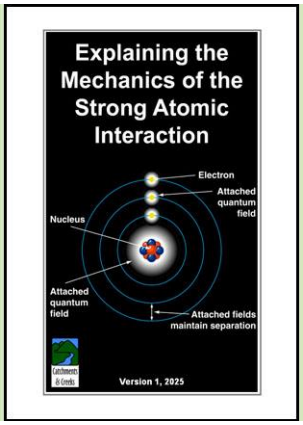

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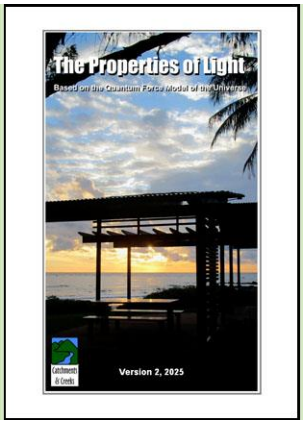

The Properties of Light, 2025

The Properties of Light – Based on the Quantum Force Model of the Universe

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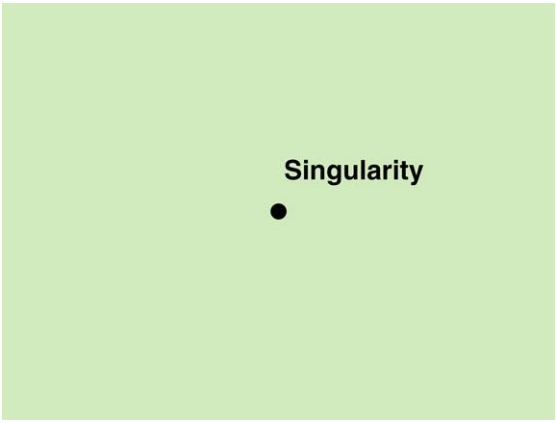
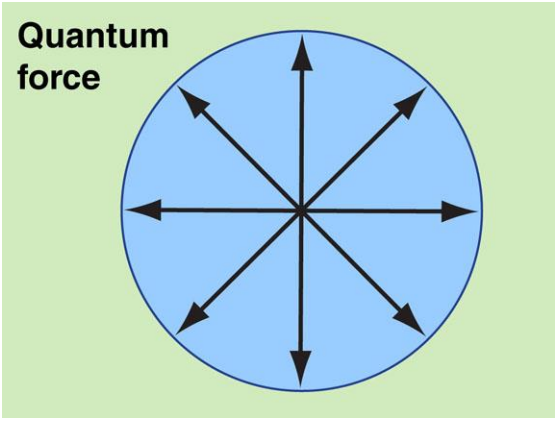
1. Introducing Quantum Forces

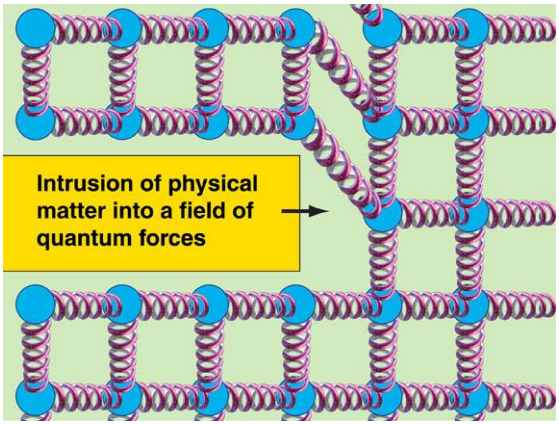
Introduction



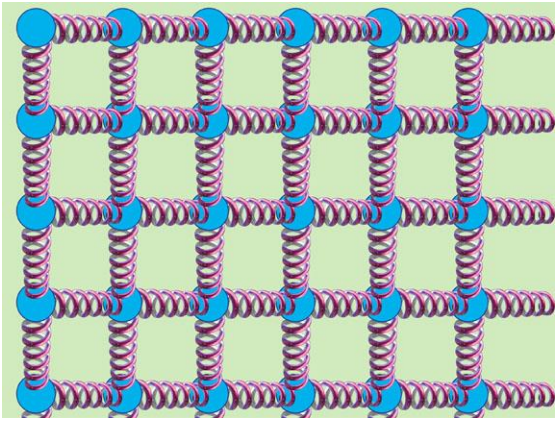
Singularity



Region of influence



Matter moving through quantum forces



Representation of a field of quantum forces

Introduction

- If we go back to the beginning, prior to the Big Bang, then we may think of the universe existed as a singularity, consisting of an almost infinite amount of dimensionless energy, or forces, existing at a single location.
- For now, I have chosen to call these forces: 'quantum forces'.
- The properties of a quantum force are assumed to be:
  - dimensionless in size, but each force has a region of influence, which expands as the universe expands
  - able to experience the effects of mass and inertia
  - quantum forces push against each other with a force that appears (?) to reduce as its region of influence expands, and
  - this pushing force varies with the inverse square of its distance of separation from physical matter.
- What held these forces in a singularity prior to the Big Bang was possibly the zero speed of causality that existed within the singularity.

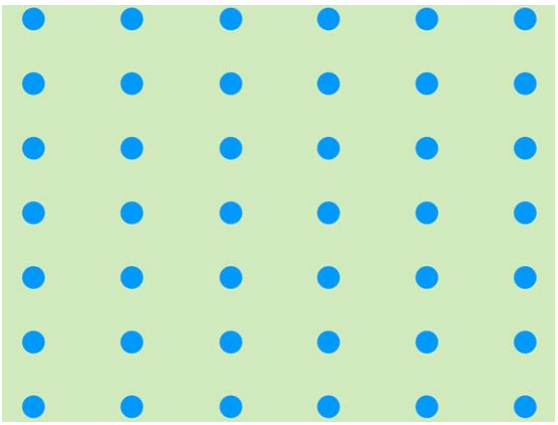
The existence of quantum forces as individual elements

- The quantum forces that fill space must consist of individual elements that can be separated.
- The separation of individual quantum forces is necessary for:
  - physical matter (e.g. a planet) to pass through a field of quantum forces, and
  - one field of quantum forces (e.g. a magnetic field) to pass through another field of quantum forces.

The various states of quantum forces

- Quantum forces are assumed to exist in three different states:
  - free
  - attached (including 'travelling')
  - concentrated.
- Physical matter is created through the concentration of quantum forces.
- Light exists as a transient form of concentrated quantum forces (i.e. a virtual particle) created by a compression wave.

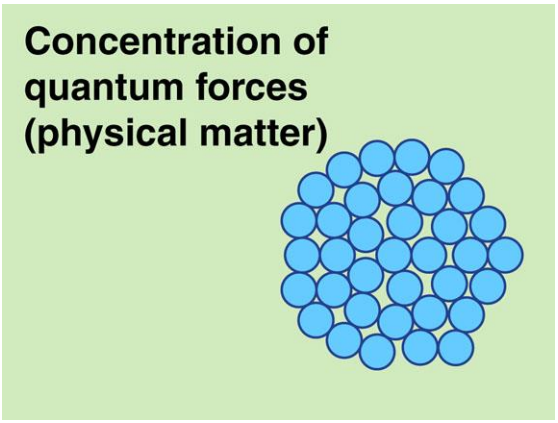
Different forms of quantum forces



Representation of free quantum forces

Free quantum forces

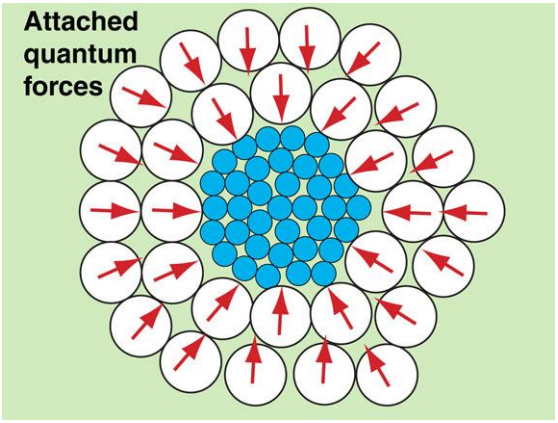
- Free quantum forces are the forces that make up the majority of space.
- The element we call 'aether' is formed from free quantum forces.
- Free quantum forces are mostly stationary, except for the ongoing expansion of the universe.
- Quantum forces also exist within physical matter—some attached to the matter, while others remaining free to move within the matter.



Concentration of quantum forces

A concentration of quantum forces

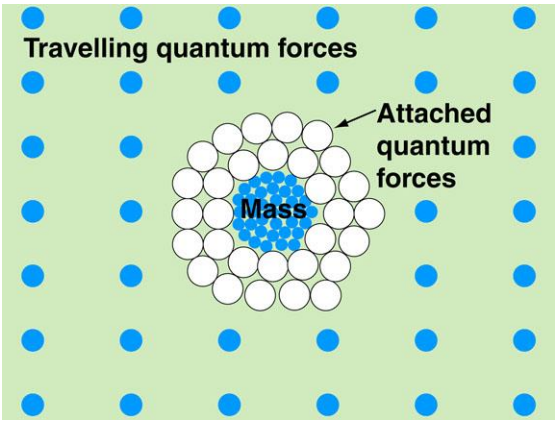
- Free quantum forces can be considered to exist at a background density that reduces as the universe expands.
- Concentrated quantum forces (i.e. matter) exist in a concentration much greater than the background density of free quantum forces.
- Concentrated quantum forces can exist as virtual particles (light), or physical particles (matter).



Quantum forces surrounding matter

Forces acting on matter

- Quantum forces, whether free or attached, surround any concentration of quantum forces (i.e. physical matter), thus causing the matter to be:
  - stable
  - spherical in shape (if possible)
  - compressed (i.e. concentrated)
  - and causing isolated objects of matter to move towards each other(i.e. a net force of attraction), thus increasing the size and density of any concentration.



Concentration in a field of free Qforces

Attached quantum forces

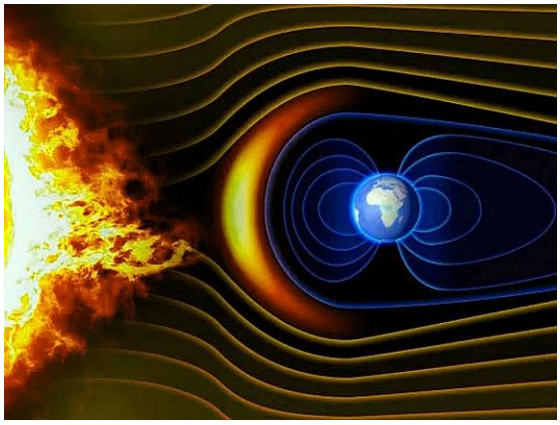
- Even though quantum forces push against physical matter, they are also being pushed by outer forces, which ultimately results in a net attraction force.
- Because of this force, some quantum forces can become firmly (but not permanently) attached to physical matter.
- If the matter moves, then these attached quantum forces will move, which in-turn will induce the movement of any travelling quantum forces that surround the attached quantum forces (one big happy party).

Different forms of quantum forces

Space

Free quantum forces (aether)

- Most quantum forces exist in a uniformly distributed gird that exists in a concentration that is constantly reducing as the universe expands.
- Aether is the substance that exists when quantum forces exist in this background concentration, which I, from time to time, refer to as a non-concentrated.
- Magnetism is simply a moving form of aether, which has a concentration linked to the concentration of the physical matter that it is attached to.



Attached magnetic (quantum) field

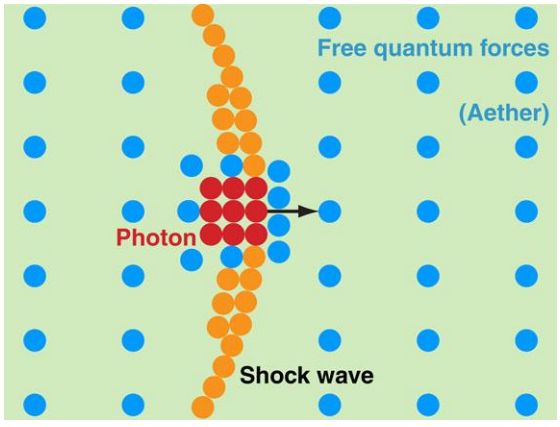
Attached quantum forces

- Even though quantum forces repel each other, this repelling action causes some quantum forces to concentrate around matter as attached quantum forces.
- The Earth has a massive volume of attached quantum forces, some firmly attached to matter, some free to move, but travel as travelling quantum forces.
- The Earth's magnetic field is made-up of those quantum forces semi-attached to the electrons that make-up the Earth's magnetic core.

Earth: a concentration of forces

Concentrated quantum forces

- In the current energy-based model of the universe, matter was considered to be a concentration of energy.
- In the force-based model of the universe, matter is considered to be made-up of concentrated quantum forces.
- All matter, including all electrons, are surrounded by attached quantum forces.
- When electrons move (i.e. electricity) their attached quantum forces also move, thus creating the attached magnetic field.

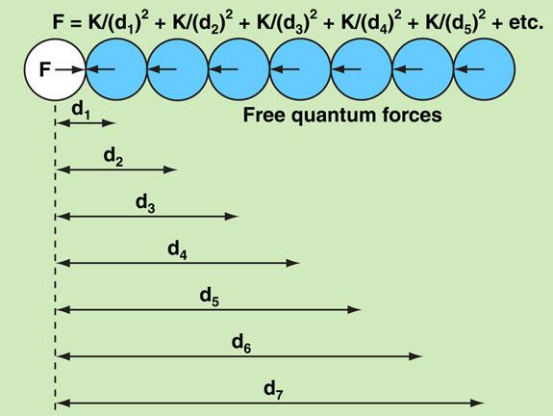


A photon of light

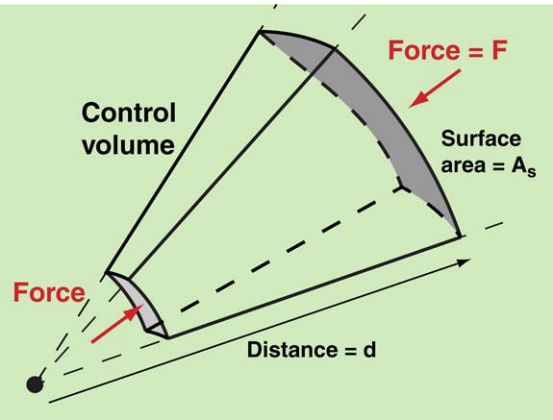
Transient concentrations of quantum forces

- When a compression wave passes through aether, a portion of the aether temporarily becomes concentrated above background levels, and then relaxes.
- Just like sound waves move as a transient concentration of air particles, light travels as a transient concentration of aether.
- It is believed (by the author) that the lateral variation in this concentration of aether is what generates the different colours that travel with all light.

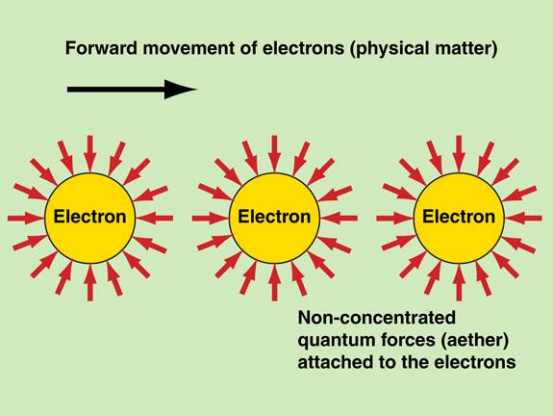
Attached quantum forces



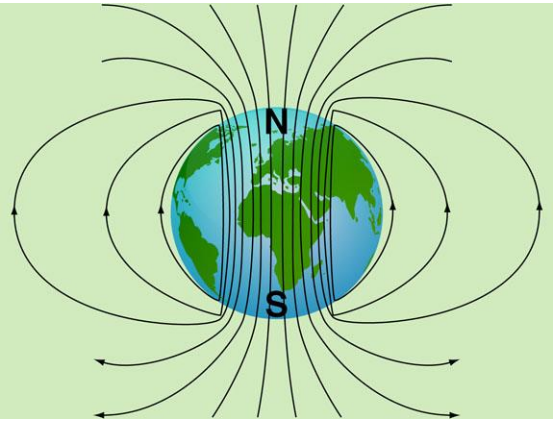
Interaction between quantum forces



Forces acting on a segment of a sphere



Quantum forces attached to electrons



Quasi-free quantum forces

The effects of distance

- As previously mentioned, quantum forces have just one task, or action, that being to repel all other quantum forces.
- The magnitude of the force exerted by one quantum force on an adjacent quantum forces depends on:
  - the sum of the mass of quantum forces, in a given direction, divided by the square of the distance of each quantum force from the principal quantum force
  - in other words, the force increases with the concentration of quantum forces.

Forces acting on a central object

- In a force-based system, if we:
  - consider the forces acting on a control volume where there is no force applied to the sides, then we find that the force per unit area acting at each end must be inversely proportional to the square of the distance from the centre in order to the total force (F) to be constant
  - this is because the surface area of a sphere increases with the square of its radius (surface area = $4\pi r^2$).

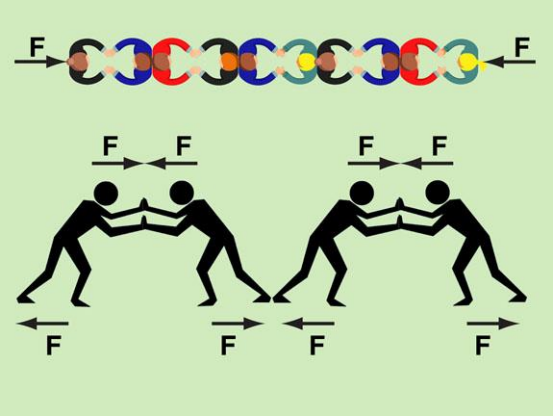
Quantum forces attached to electrons

- The region of influence of a quantum force is significantly smaller than an electron.
- Quantum forces will push inwardly upon electrons because electrons are formed from a concentration of quantum forces (just like a planet).
- Thus, electrons will always be surrounded by a ring of attached quantum forces, which will likely influence the spacing a electron shells for any given background pressure.

Quantum forces attached to Earth

- Quantum forces are attached to every element of a planet, including every electron and nucleus—they are what makes every free-forming object want to take the shape of a sphere.
- Within any planet, there will be quantum forces that can move freely through the planet while staying within the planet, and those that travel with the planet while also travelling in loops in and out of the planet, such as in the Earth's magnetic field.

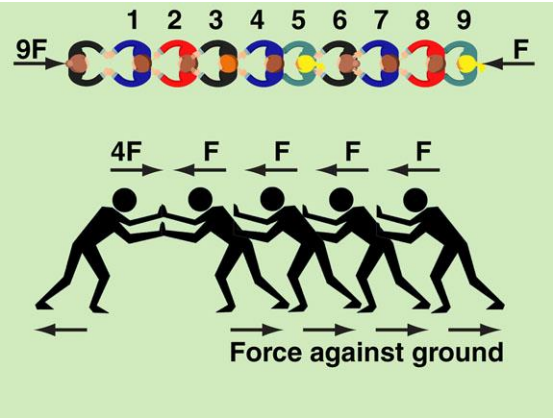
Quantum forces act as point forces, not like pressure



Simulating pressure force

The action of pressure

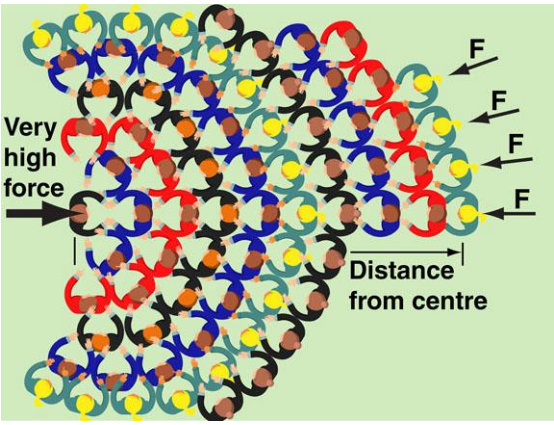
- It would seem logical to think of the forces exerted by quantum forces as acting like a fluid in a pressure container, but quantum forces don't act like pressure, they act like a collection of point forces.
- The following discussion is not perfect, but I hope that it will give you a bit of an idea.
- The action of pressure is like a crowd of people standing back-to-back, pushing each other such that the net force is balanced between any two people.



Simulating quantum force

The action of forces

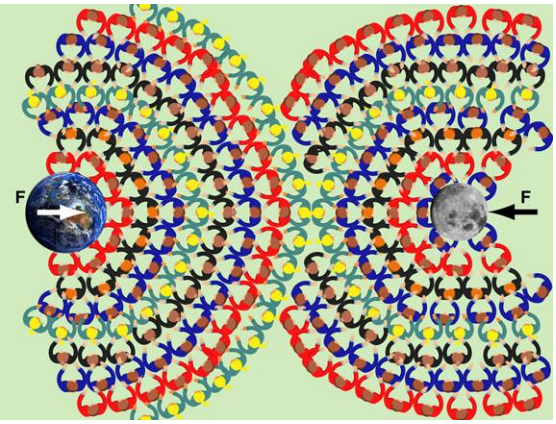
- However, the quantum forces that fill space work in a different way—if a concentration occurs (i.e. matter), then:
  - a concentration of attached quantum forces surrounds the matter
  - they push against each other as well as pushing against the matter
  - as much as they push outwards, they are pushed inwards with a greater force.



Simulating gravitational forces

Forces on a central object

- The surface area of a sphere varies with the square of its radius (area = $4\pi r^2$).
- When quantum forces surround a planet, the surface area of the net force pushing towards the plant increases with the square of the distance from the planet.
- This means that the force acting on each quantum force decreases with the square of the distance, which causes the region of influence of each quantum force to increase with its distance from the planet (not shown in my diagrams).

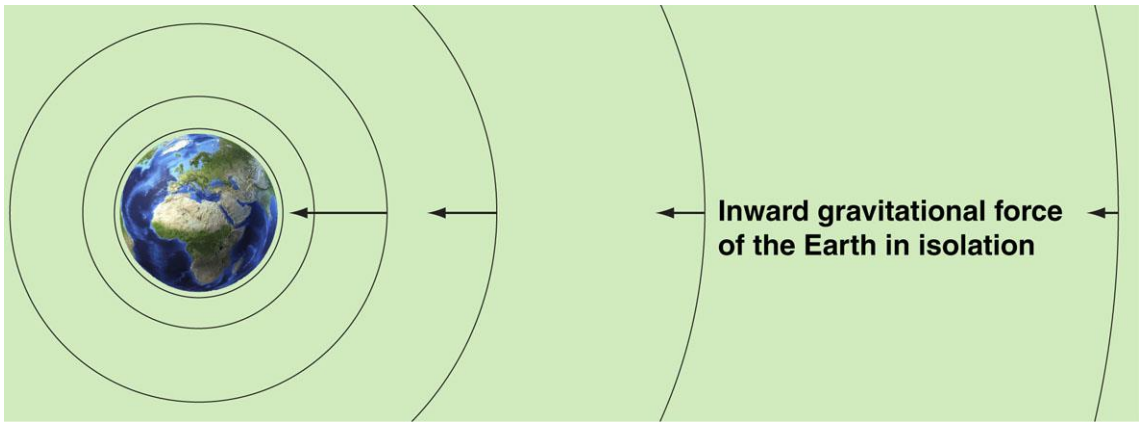


Simulating planetary 'attraction'

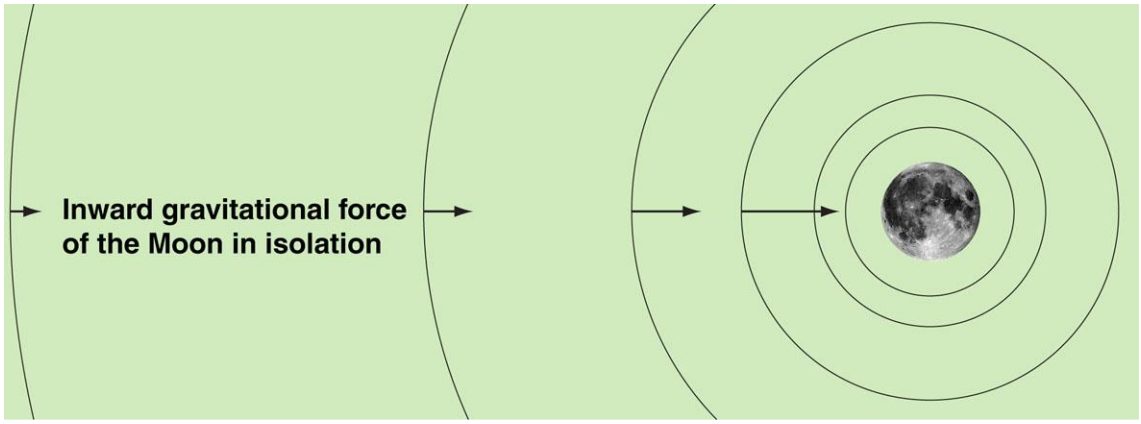
Action of forces on two objects

- The forces that surround any star, planet or moon, extend across space for vast distances, but not indefinitely.
- When two celestial bodies are close to each other, the sphere of influence of the quantum forces that surround each moon or planet will overlap each other, and the attracting forces will superimpose.
- Ultimately this action causes a net force to push these two objects towards each other, which we call 'gravity'.

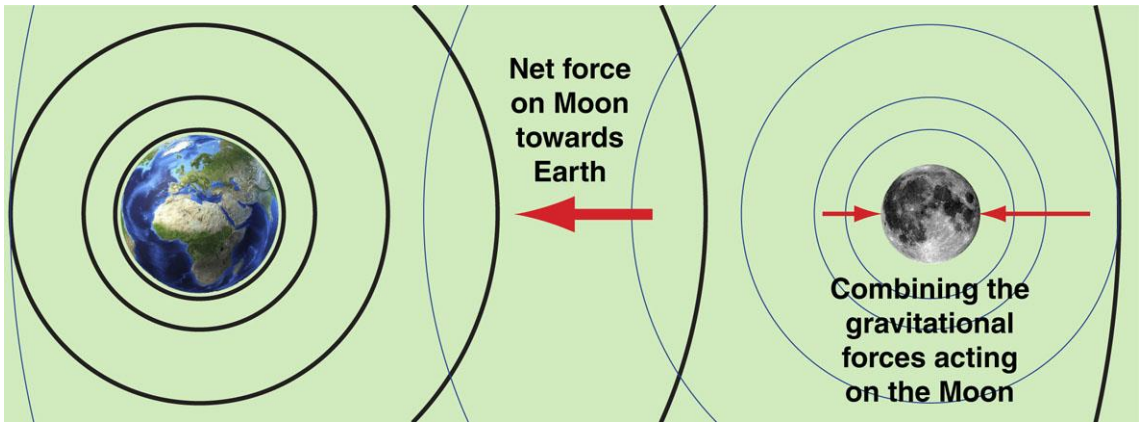
Gravitational forces acting on the Earth and Moon



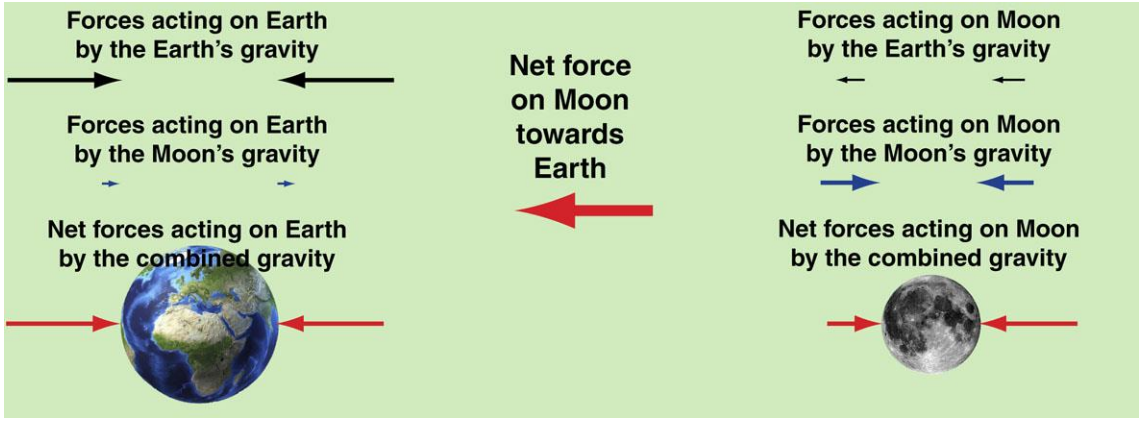
Inward compressing force on the <u>Earth</u>



Inward compressing force on the <u>Moon</u>

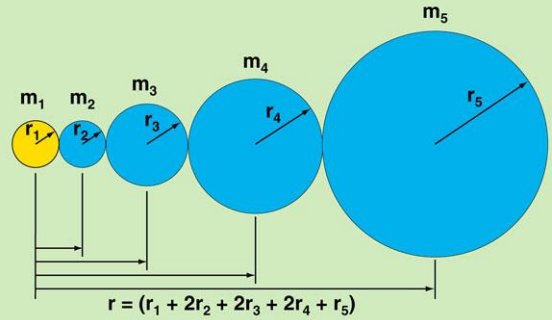


Combined forces acting on the Earth and Moon



Combined gravitational forces acting on the Earth and Moon

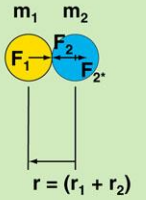
Creating the force of attraction and repulsion



Electron and attached quantum forces

$$F_1 = F_2 - F_{2^*} + F_3 - F_{3^*} + F_4 - F_{4^*} + F_5 - F_{5^*} + \text{etc}$$

$$F_2 = \frac{G.m_1.m_2}{(r_1 + r_2)^2}$$



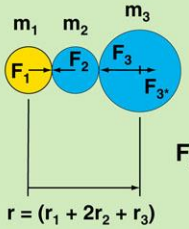
$$F_{2^*} = \sum \frac{(G.m_2.m_n)}{(r_2 + 2r_3 + 2r_4 + 2r_5 \ldots)^2}$$

F_{2^*} = sum of forces of attraction to outer quantum forces

Forces acting on Mass-2

$$F_1 = F_2 - F_{2^*} + F_3 - F_{3^*} + F_4 - F_{4^*} + F_5 - F_{5^*} + \text{etc}$$

$$F_3 = \frac{G.m_1.m_3}{(r_1 + 2r_2 + r_3)^2} + \frac{G.m_2.m_3}{(r_2 + r_3)^2}$$

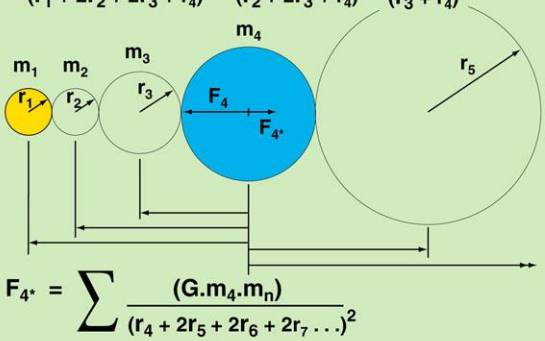


We could assume $m_2 = m_3$

$$F_{3^*} = \sum \frac{(G.m_3.m_n)}{(r_3 + 2r_4 + 2r_5 + 2r_6 \ldots)^2}$$

Forces acting on Mass-3

$$F_4 = \frac{G.m_1.m_4}{(r_1 + 2r_2 + 2r_3 + r_4)^2} + \frac{G.m_2.m_4}{(r_2 + 2r_3 + r_4)^2} + \frac{G.m_3.m_4}{(r_3 + r_4)^2}$$



$$F_{4^*} = \sum \frac{(G.m_4.m_n)}{(r_4 + 2r_5 + 2r_6 + 2r_7 \ldots)^2}$$

Forces acting on Mass-4

Introduction

- On this page I will describe the type of mathematics that demonstrates how the attached quantum forces ultimately generates a net force of attraction.
- This is NOT the correct mathematics, because in this example I have assumed that the effective size of the quantum force increases in proportion to distance, which is not correct (I believe).
- The correct analysis may require the use of Coulomb's law in order to ultimately develop the gravitational equation.

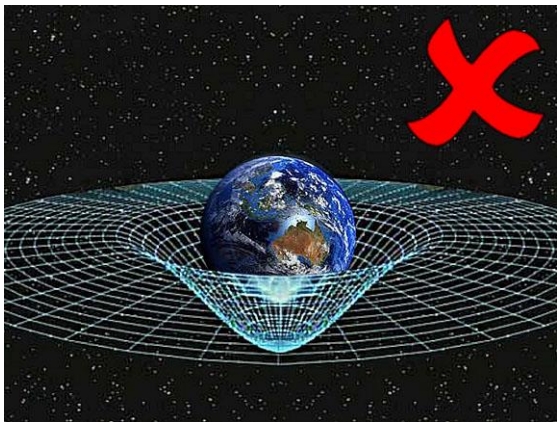
Forces acting on primary mass (m_1) and first secondary mass (m_2)

- There is a repelling force that exists between the primary mass (m_1) and the first attached quantum force (m_2).
- The primary mass can be anything from an electron to a planet, or a black hole.
- Key to this analysis is the relative size of the primary mass (r_1) compared to the attached quantum forces (r_2, r_3, r_4, etc.).
- For an electron; $r_1 > r_2$.
- For a nucleus; $r_1 >>> r_2$.
- The repelling force (F_2) that exists between the primary mass (m_1) and the first attached quantum force (m_2) is governed only by masses m_1 and m_2.
- The repelling force (F_{2^*}) that exists between the first attached quantum force (m_2). and the outer attached quantum forces involves mass m_2 and all the masses outside m_2.
- This same analysis is repeated for all the attached quantum forces until the outer most attached quantum force has an inward repelling force equal to the background repelling force of free aether.

The effect of particle size

- For a mass the size of our Sun, the attached quantum forces will extend beyond Pluto before the attached quantum force 'pressure' equals the background aether, after which, the net force converts to the repelling force of aether.
- For a primary mass the size of an electron, the distance from the electron before the net force converts from attraction to repelling in microscopic, which means electrons repel each other, rather than attract each other.

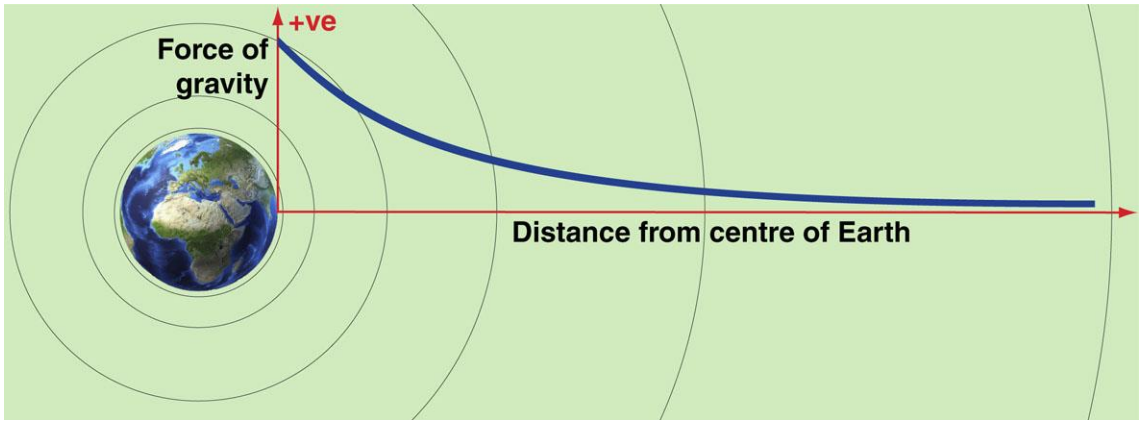
Creating the force of attraction and repulsion



'Spacetime' does not exist

The force of gravity adjacent the Earth

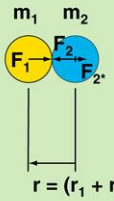
- Sorry Einstein, but gravity is <u>not</u> an action resulting from curved spacetime.
- 'Time' doesn't even exist in reality; it is just a human invention used as a measuring tool.
- Gravity, like everything in the universe, is a product of quantum forces, and the result of how these forces manage to turn a fundamental repelling force into a net force of attraction when applied in three dimensions around a central concentration of quantum forces (Wow!).



Variation in the force of gravity with distance from Earth

$$F_1 = F_2 - F_{2^*} + F_3 - F_{3^*} + F_4 - F_{4^*} + F_5 - F_{5^*} + \text{etc}$$

$$F_2 = \frac{G.m_1.m_2}{(r_1 + r_2)^2}$$



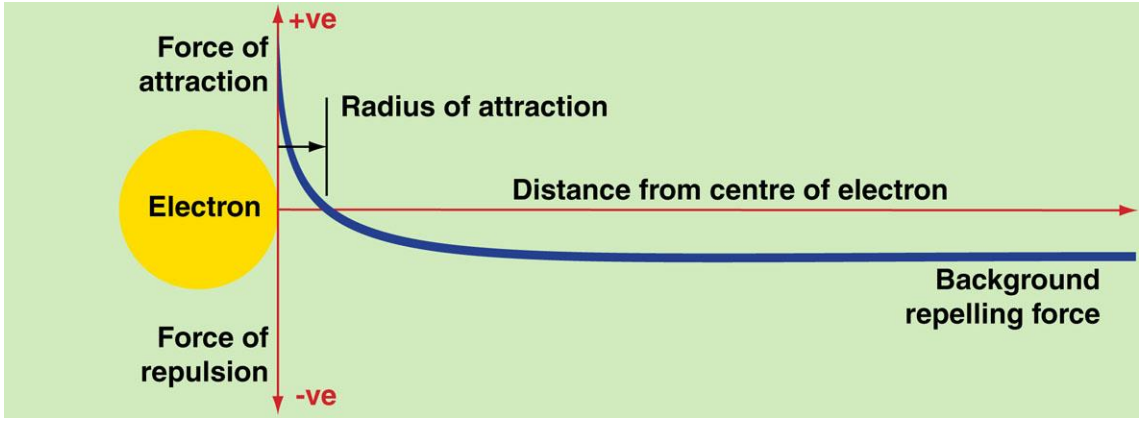
$$F_{2^*} = \sum \frac{(G.m_2.m_n)}{(r_2 + 2r_3 + 2r_4 + 2r_5 \ldots)^2}$$

F_{2^*} = sum of forces of attraction to outer quantum forces

The relative size of mass and Q-force

The force of gravity adjacent an electron

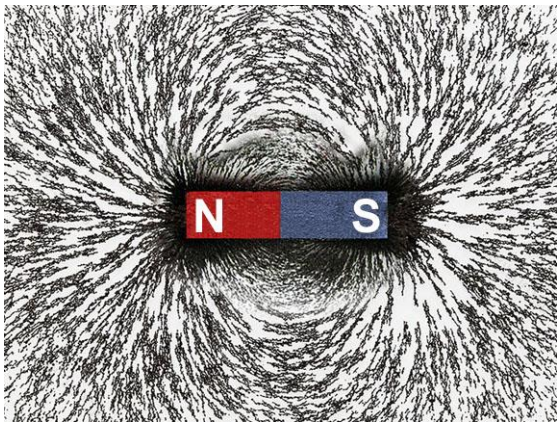
- The net force of attraction reduces with the square of the distance of separation.
- As the distance of separation increases, the net force reduces until it can no longer overcome the background force of repulsion shared by all free quantum forces, after which this repulsion force dominates.
- The distance to this attraction–repulsion inflection varies with the relative size of the primary mass relative to the size of the adjacent quantum force (another Wow!).



Variation in the force of gravity with distance from an electron

2. Magnetism

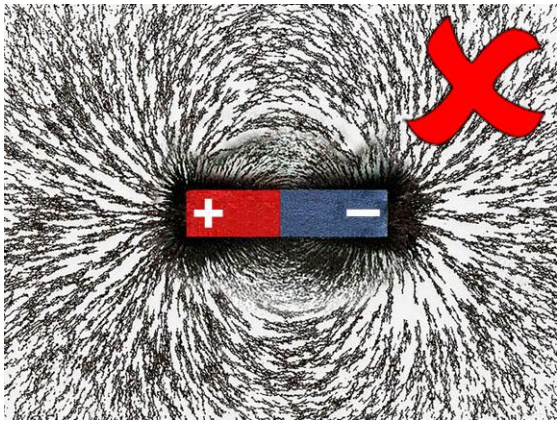
Introduction



Magnetism

Introduction

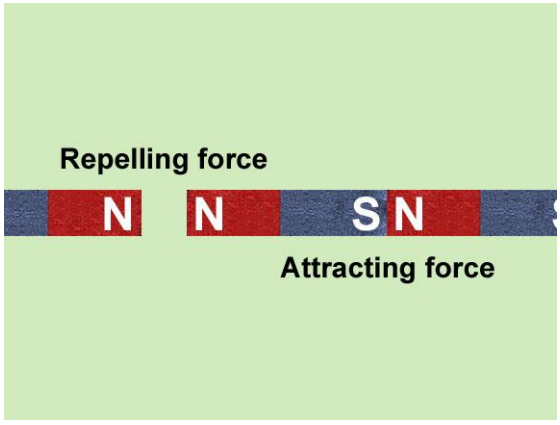
- Most of astrophysics can be understood with just an understanding of high school physics, and a really good teacher.
- In this document I hope to use high school physics to explain:
  - what causes magnetism
  - what allows electricity to generate electromagnetism
  - what created Earth's magnetic field
  - what caused the Earth to spin.



No positive or negative effects

No more positive and negative charges

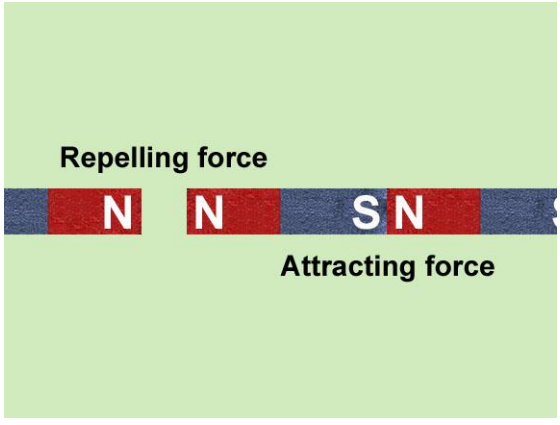
- In order to correctly discuss magnetism, we first need to remove all mention of positive (+) and negative (-) charges.
- Surprise, surprise, 'magnetism' has **nothing** to do with charged particles.
- The concept of charged particles was **invented** as a means of describing the force that holds electrons in orbit around a nucleus, but this explanation (in my opinion) is wrong.



The 'assumed' magnetic forces

An invented force

- Electromagnetism is said to be a fundamental interaction because this force could not be explained in terms of the other known fundamental interactions.
- This 'interaction' assumes both 'repelling' and 'attracting' actions.
- However, both of these actions can be explained by quantum forces.
- The 'action' that causes the repelling force is identical to the 'action' that causes the attracting force.

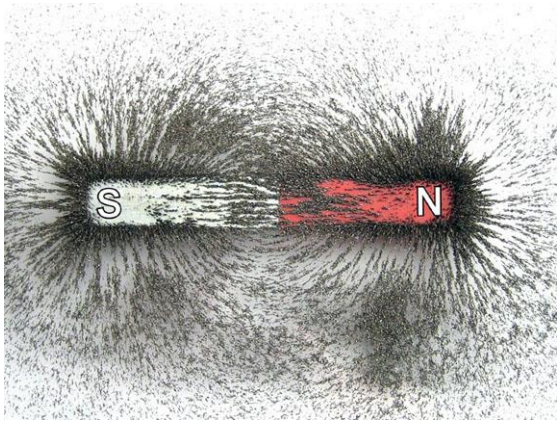


Assumed magnetic forces

The force of magnetism

- This chapter will demonstrate how the actions of magnetism can be explained using the quantum force model of the universe.
- If correct, then this will mean:
  - there is no need to label particles as either positive or negative
  - electricity is not specifically linked to the movement of charged particles
  - however, we can continue to use the term 'magnetism' to describe the action.

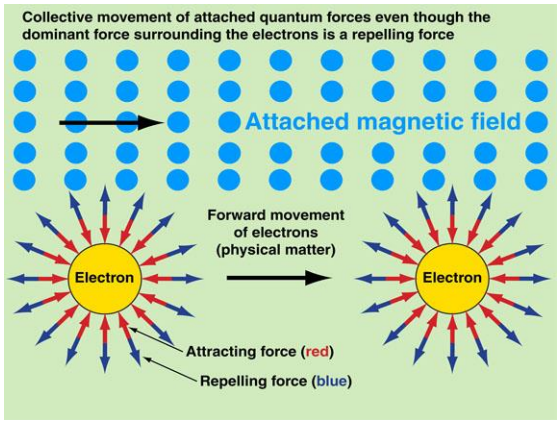
Magnetism and quantum forces



Bar magnet

Magnetism

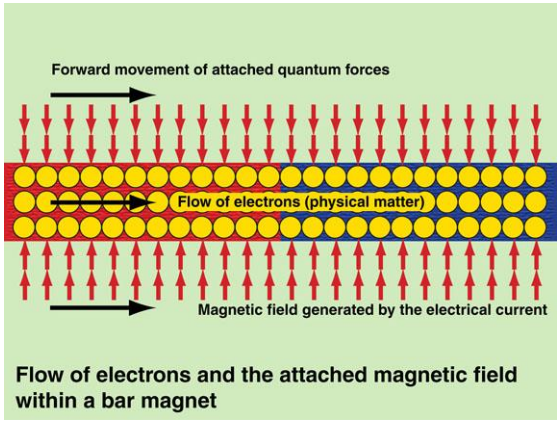
- The quantum force model suggests that magnetism is generated by the movement of non-concentrated quantum forces.
- In effect, what flows in a magnetic field is concentrated aether, the same thing that makes-up the majority of space.
- If we accept that quantum forces display the properties of mass and inertia, then the force of magnetism could cause a transfer of momentum.



Electrons moving the magnetic field

Attached quantum forces

- Quantum forces exert a repelling force on other quantum forces.
- An electron is formed from a concentration of quantum forces.
- Thus quantum forces will push against an electron causing an electron to adopt a spherical shape.
- This action results in some quantum forces becoming attached to the outside of an electron, ironically by their own repelling force.

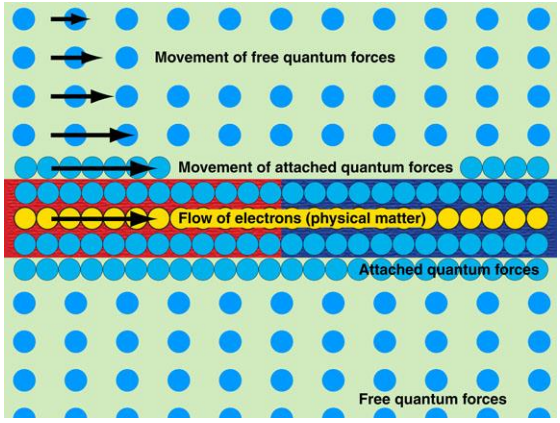


Flow of electrons and the attached magnetic field within a bar magnet

Quantum forces attached to electricity

Movement of attached quantum forces

- When electrons move along an electrical wire, the attached quantum forces move with the electrons, both inside and outside of the wire.
- Quantum forces (shown as red arrows) are significantly smaller than electrons.
- Because quantum forces are attached to all electrons, these forces exist throughout all physical matter, including electrical insulation materials.

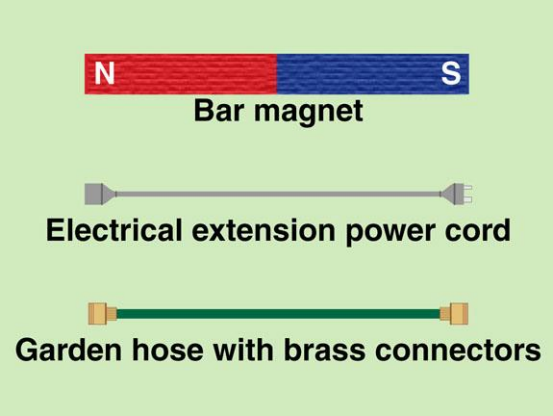


Quantum forces now shown in 'blue'

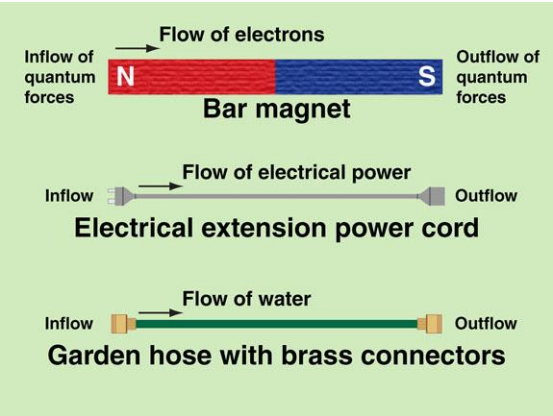
Movement of travelling quantum forces

- Free quantum forces exist throughout space, as well as within physical matter.
- Those quantum forces that travel with matter, but are able to move freely within the matter, may be termed 'travelling'.
- The movement of attached quantum forces can induce the movement of these travelling quantum forces.
- Thus, electrons move attached quantum forces, which can induce movement of the surrounding travelling quantum forces.

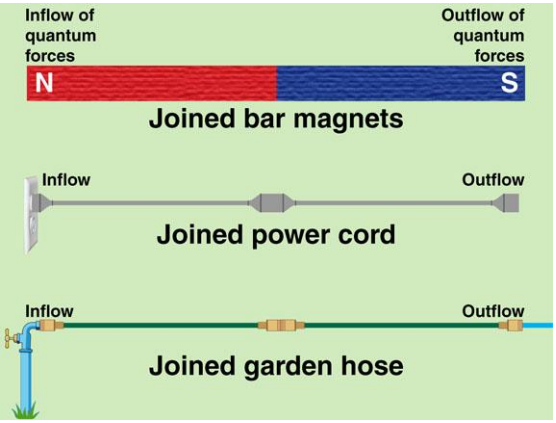
Joining magnets



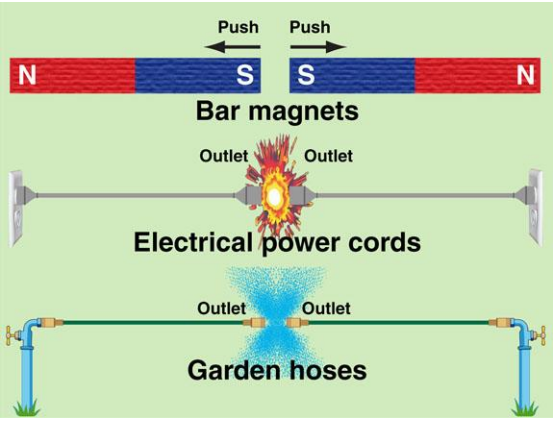
Bar magnet, power cord and garden hose



Magnet, power cord and garden hose



Joining magnets, power cords and hoses



Joining the 'wrong' ends!

Introduction

- If it is accepted that magnetism is the flow of non-concentrated quantum forces, and that the movement of these 'free' quantum forces is caused by the directional movement of 'free' electrons, then:
  - the positive end of a bar magnet can be seen as the outflow point of quantum forces (based on conventional flow)
  - the negative end of a bar magnet can be seen as the inflow point, and
  - a bar magnet can be compared to a power cord and a garden hose.

Magnets are just a conduit of flow

- Instead of labelling the ends of a bar magnet as positive (+) and negative (-), they could be labelled the *inlet* and the *outlet*, like on a garden hole.
- What flows into and out of a magnet are free quantum forces.
- Similarly, what flows into and out of an electric power cord are electrons.
- Whereas, what flows into and out of a garden hose is water.

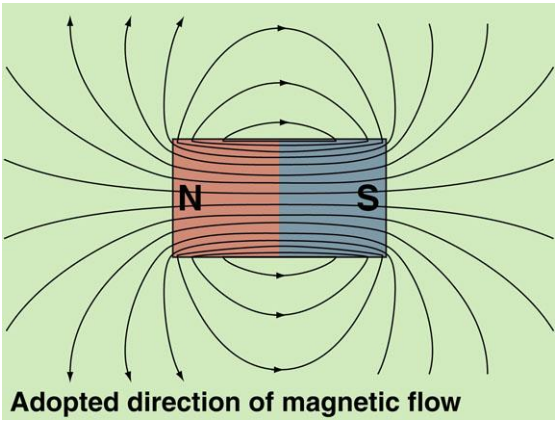
Joining two magnets

- When two electrical power cords are joined, what was previously the outlet of one cord is joined to the inlet end of another power cord.
- The junction of the two power cords is no longer an inlet, nor an outlet, but just apart of the now longer power cord.
- The same outcome occurs if two garden hoses are joined.
- Similarly, the joining of two bar magnets simply produces a longer bar magnet.

Joining the 'wrong' ends

- Power cords are designed such that it is not possible to join two power inlets, or two power outlets.
- Garden holes are multi-directional; however, problems will arise if someone attempts to join the active outlets of two garden hoses.
- Similarly, significant resistance will arise if someone attempts to join the outlet (positive) ends of two bar magnets.

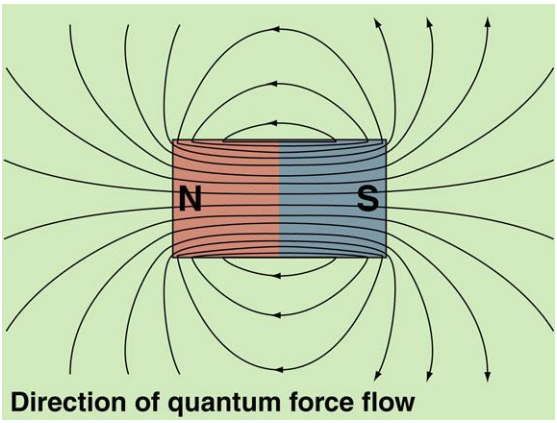
The mechanics of a magnet's repelling force



Direction of +ve flow by convention

Direction of current based on the movement of a positive ion

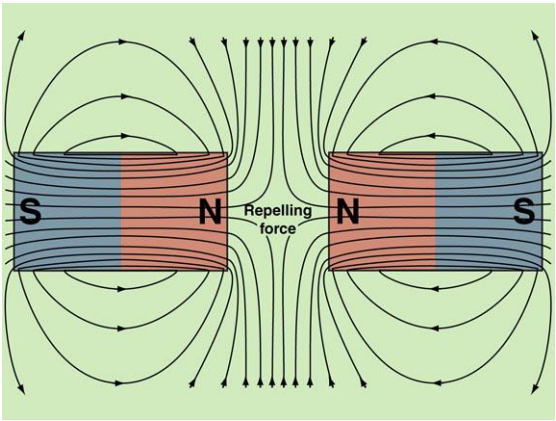
- Technically it is incorrect to say that the magnetic flow is from the north to south end, or vice versa, because the magnetic flow is a closed circuit, which means quantum forces travel from the north to the south, and from the south to the north.
- But at some stages the flow is insides the magnet, while at other stages the flow is outside the physical magnet.
- Convention states that the flow is from north to south, or from +ve to -ve.



Actual direction of flow of quantum forces

Direction of electron and quantum force movement

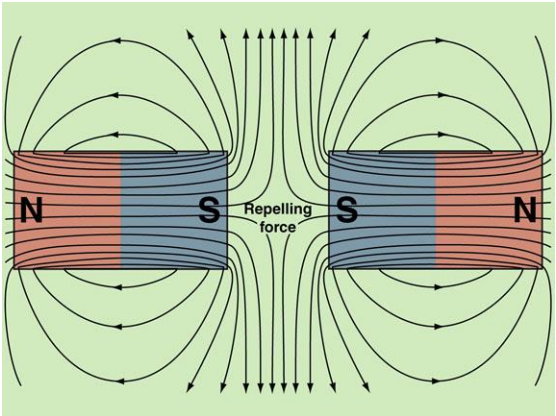
- The actual external flow of quantum forces is from south to north, or from the negative end to the positive end.
- The actual internal flow of quantum forces is from north to south, or from the positive end to the negative end.



Two adjacent northern (positive) ends

The cause of the repelling force (+ve ends)

- A strong repelling force is generated when two positive ends are placed next to each other.
- What everybody should notice is how easily the magnets desire to move laterally—it is almost like the magnets want to move sideways.
- This lateral movement is even stronger than the forces generated when to water jets are aimed at each other.
- This lateral movement is very important.

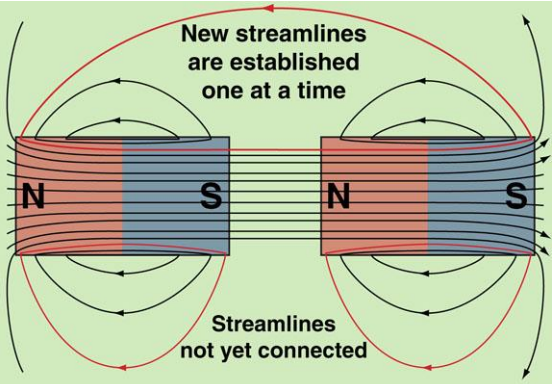


Two adjacent southern (negative) ends

The cause of the repelling force (-ve ends)

- A similar strong repelling force is generated when two negative ends are placed next to each other.
- In the diagrams I have labelled the magnets north (N) and south (S) because I am uncomfortable with the terminology of 'positive' and 'negative' ends.

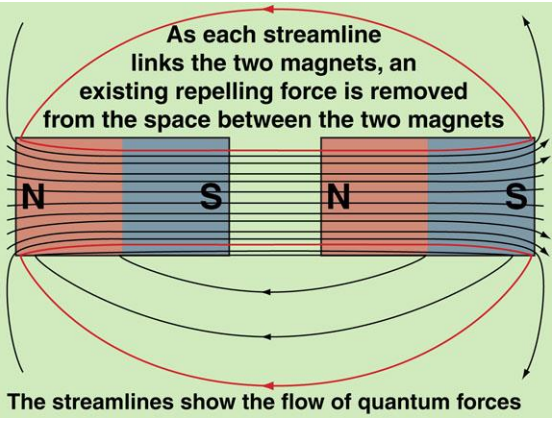
The mechanics of a magnet's apparent 'attracting' force



Actual quantum force flow

Shifting of the magnetic streamlines

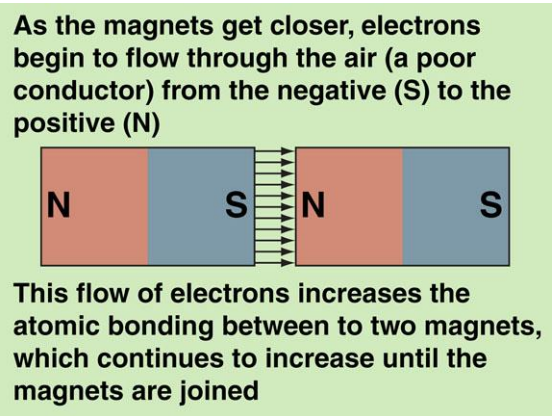
- Joining the north end to the south end allows new 'links' to form, and causes an attraction force.
- It has nothing to do with positive (+ve) and negative (-ve) attraction.



Actual quantum force flow

Removal of repelling forces from between the magnets

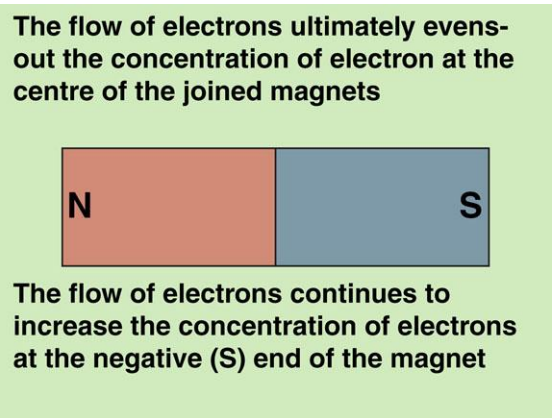
- Removing two magnets from each other requires energy in order to break the magnetic connections.



Actual quantum force flow

Electrons passing from magnet to magnet

- As the magnets get closer together, electrons can begin to flow between the magnets, along with their attached quantum forces.

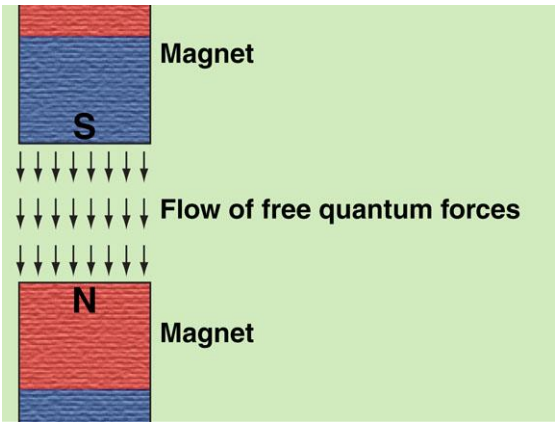


Joined magnet

Growth of atomic bonds

- Once joined, the flow of electrons continues to increase the concentration of electrons at the southern end.

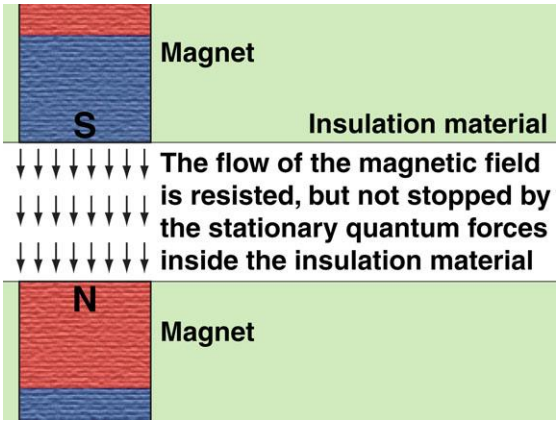
The mechanics of magnetic flow through insulation material



Electrical flow in an insulated conductor

Insulated electrical wires

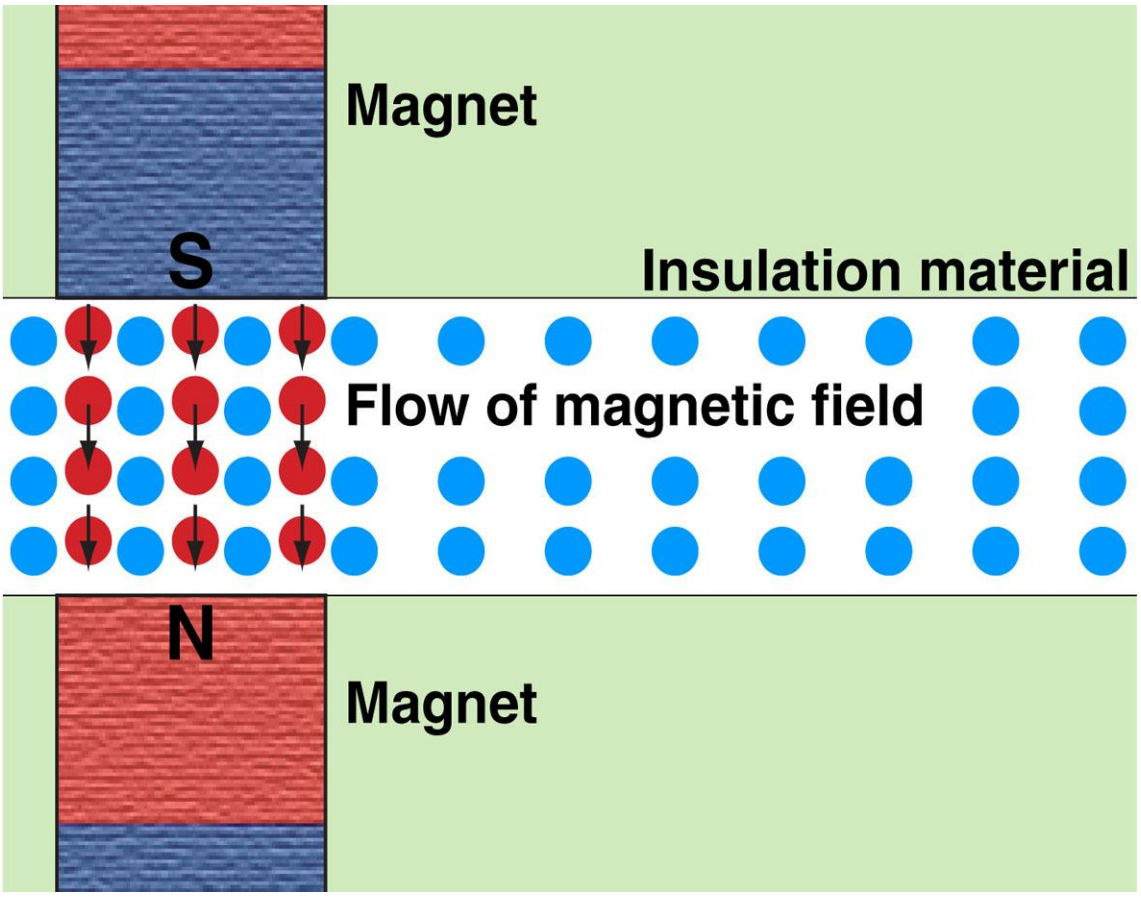
- When an electrical wire is insulated, the electrons within the insulation material are resistant to any form of movement, which means their attached quantum forces will also resistant to any form of movement.
- Even though insulation material will contain free quantum forces, these forces will not freely respond to the movement of quantum forces in the wire because of the stationary quantum forces attached to the electrons within the insulation material.



Flow of free quantum forces

Magnetic flow through insulation

- Insulation material will, however, allow limited magnetic flow to occur through the material.
- A bar magnet held on one side of a sheet of insulation can induce the movement of another bar magnet on the other side.
- This is because the magnet passes its own flow of free quantum forces through the insulation.
- The insulation resists this movement, but cannot stop it, but the thickness of the insulation does become a factor.



Magnetic flow through a sheet of insulation material

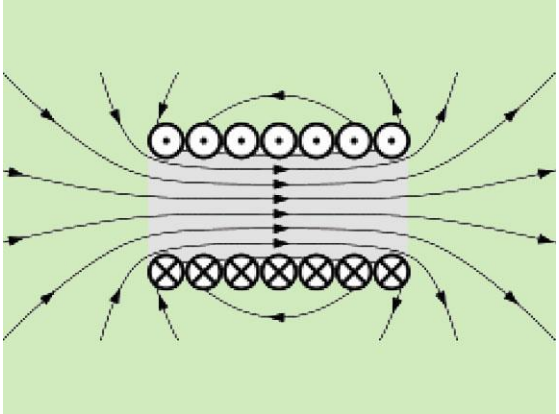
3. Electric Motors

Introduction

Electric motor

Introduction

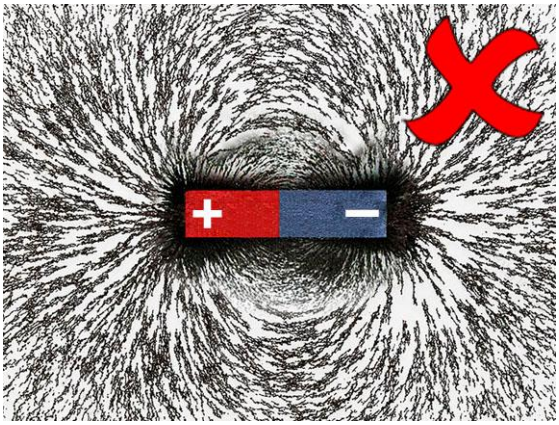
- In order to understand the physics of an electric motor, you need to understand:
  - the movement of attached quantum forces caused by the movement of physical matter (i.e. electrons)
  - the movement of travelling quantum forces caused by the movement of attached quantum forces, and
  - the movement of physical matter (i.e. the rotor, rotating shaft, or axle) caused by the movement of attached quantum forces.



Solenoid

Electric motors

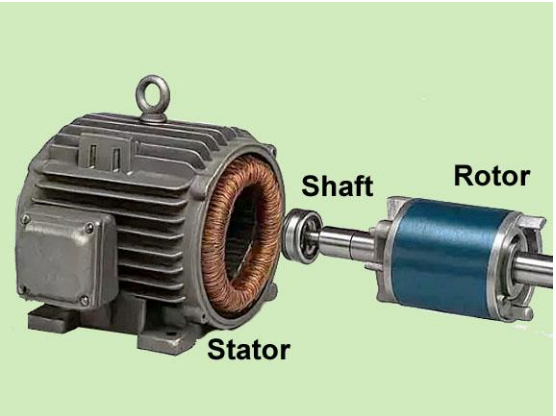
- Most motors use some form of energy to generate the mechanical action of torque or rotation.
- Electric motors use electrical current to generate mechanical motion.
- Electric motors can be adapted to the use of either direct current (DC), or alternating current (AC).
- A solenoid is a type of electric motor that generates lateral (axial) movement rather than radial (rotational) movement.



Positive and negative charges

Charged particles

- A belief in the quantum force model of the universe means no longer having to adopt the *positive (+)* and *negative (-)* approach to the identification of particles.
- In the past, particles were arbitrarily labelled either positive or negative based on an electron being considered negatively charged.
- However, the operation of electric motors has NOTHING to do with positive and negatively charged surfaces.

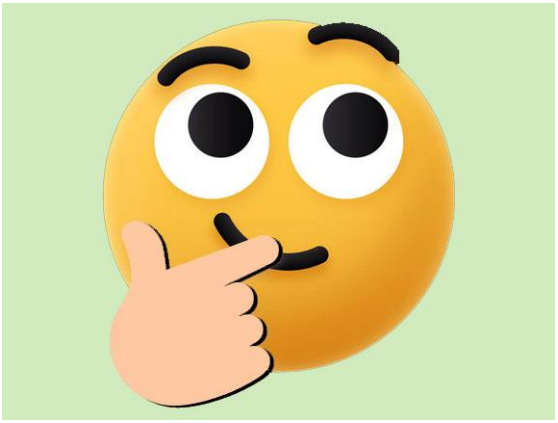


Components of an electric motor

Terminology

- Armature – the winding of wire that surround a ferromagnetic core (the electromagnet).
- Brushes – electrical contacts connected to the commutator.
- Commutator – a rotary electrical switch connected to the rotor, which periodically reverses the electrical flow.
- Rotor – is the rotating axle of the motor.
- Stator – this is the casing that surrounds the rotor, and usually holds the magnets.

The big ‘untruth’ in electromagnetic science



Thinking

Problem

Disagreeable

Happy for now!

The statement

- There is a ‘statement’ that has been repeated numerous time in the electromagnetic industry that I believe has a questionable connection with the truth.
- I am far from being an expert on this topic, but this statement appears to be linked back to Lorentz force law, and possibly Faraday’s law of induction.
- The statement can be written in many different ways, but the statement looks something like the following examples:

‘An electric current passing through the wire causes the magnetic field to exert a force.’

‘A moving charge in a magnetic field experiences a force perpendicular to its own velocity and to the magnetic field.’

*‘A charged particle that is moving with velocity **V** in a magnetic field **B** will feel a magnetic force **F**.’*

- Unlike the above quotes, I suspect that both Lorentz and Faraday chose their words more carefully.
- The problem has likely occurred because the correct wording has been shortened over time, and key words have been dropped.

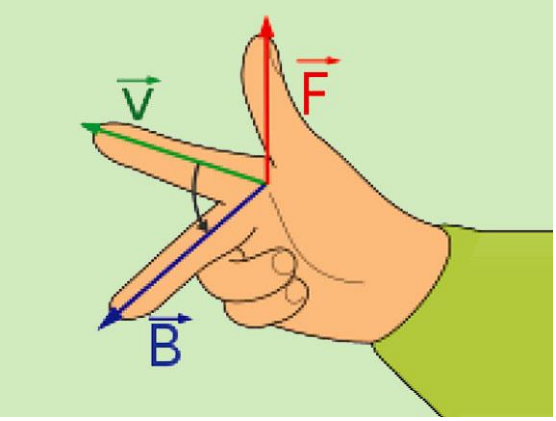
So what is it that I believe is so wrong with these statements

- My problem is that the above statements suggest that a force will always exist if a charged particle moves through a fixed magnetic field.
- My first objection is to any and all reference to ‘charged’ particles, which don’t exist (in my opinion)!
- My second objection is to the fact that a force does not always exist in such cases—it depends on the velocity of the electrons (and I mean: speed & direction).

The truth

- If a force always existed, then a frictionless electric motor would continue to accelerate its rotational velocity, but it doesn’t.
- An electric motor will settle on a set rotational velocity for a given magnetic flux and electrical current.
- In other words, there is a rotational velocity of the electric field where no force is generated.

The rules of conventional flow vs actual flow

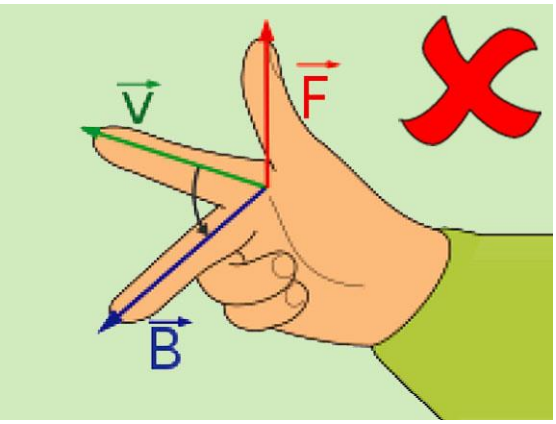


The right-hand rule (Wikipedia)

The right-hand rule

- As I stated at the beginning of this document, electromagnetics' is not my field of study, so I am easily confused.
- Speaking of confusing; I love how the left-hand rule for electric motors becomes the right-hand rule for generators (?).

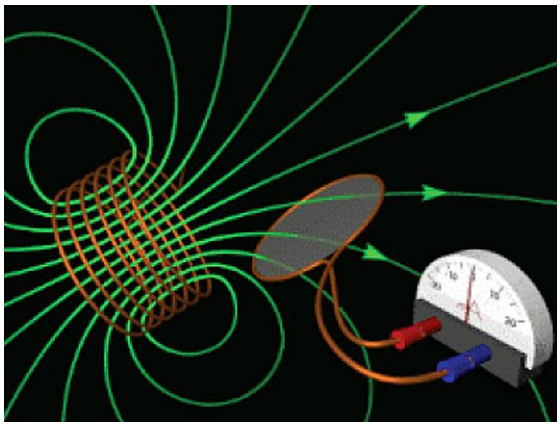
'Using the right hand, pointing the thumb in the direction of the current, and the fingers in the direction of the magnetic field, the resulting force on the charge points outwards from the palm.'



When rules don't apply

My problem

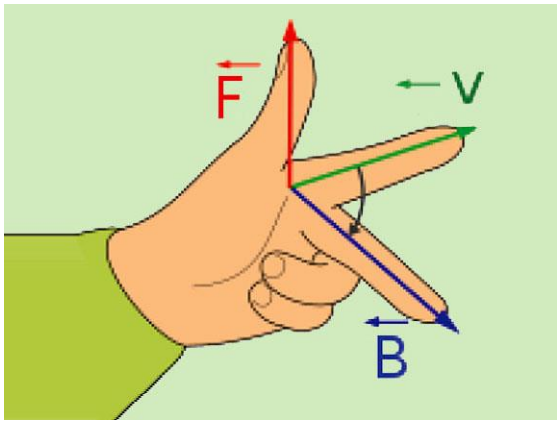
- Whichever hand and choice of axis you use, the rule does not always apply as stated.
- If the shaft is rotating slower than the 'equilibrium rotation', i.e. then the applied force is in balance with the force of resistance (friction), and the right-hand rule applies.
- However, if the shaft is rotating faster than the 'equilibrium rotation', then the direction of the force is reversed, and the left-hand rule applies.



Electrical current

Faraday's law

- Electromagnetic or magnetic induction is the production of an electromotive force (emf) across an electrical conductor in a changing magnetic field.
- Lenz's law describes the direction of the induced field.
- Faraday's law was later generalised to become the Maxwell–Faraday equation, one of the four Maxwell equations in his theory of electromagnetism.

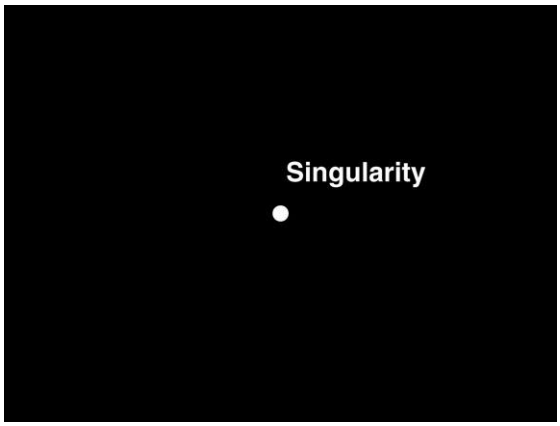


The left-hand rule

Conventional flow vs actual flow

- It is conventional in electronics to assume the electrical flow is from the positive to the negative, known as the conventional flow.
- However, it is know that the actual flow of electrons is the reverse—the flow is from the negative to the positive.
- What this means is that if you were to study the actual flow of quantum forces, then the 'right-hand rule' now becomes the 'left-hand rule'—confused?

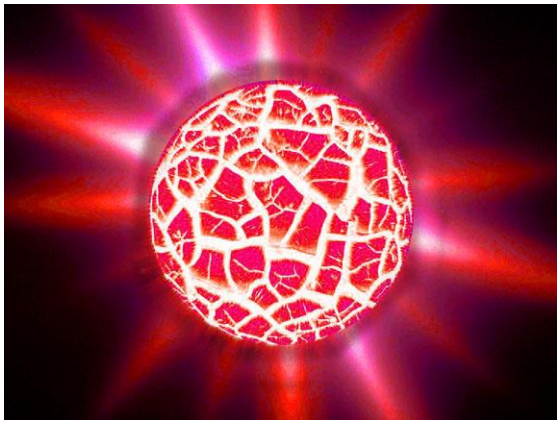
Why does a magnetic field always want to move to the 'right'



Singularity

Introduction

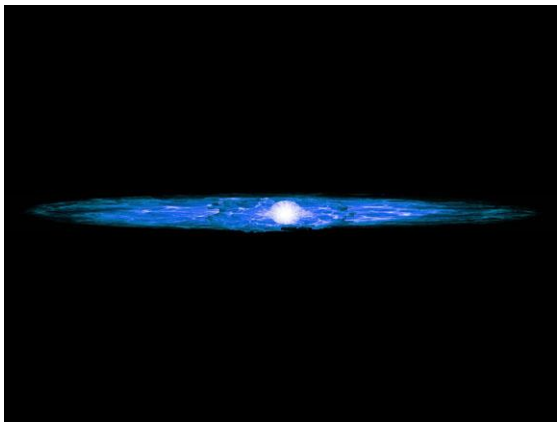
- The following discussion is pure speculation on my part, based solely on a bit of logic, and a bit of physics.
- What I am attempting to explain is:
  - what caused quantum forces to start spinning
  - why all quantum forces spin in the same direction
  - why a quantum force always wants to move to the left of an approaching quantum force.



The Big Bang

The Big Bang

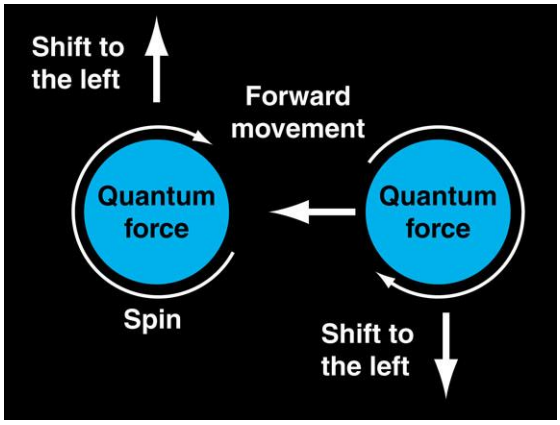
- This explanation is based on the following assumptions:
  - prior to the Big Band, the universe existed as a singularity
  - the expansion of a singularity results in a two dimensional expansion due to the effective 'cloning actions' of each unit of expansion
  - the early stages of the expansion consisted of cloned units moving in two dimensions.



The expansion

The 'spin'

- In the early stages of the expansion, the effects of mass and inertia resulted in time delays, and ultimately, non-uniformity across the expanding universe.
- Non-uniformity across the universe caused potential collisions, and each potential collision caused each object to spin as they 'brush' pass each other.
- This action would have caused all the quantum force units to adopt the same frictionless axis of spin due to the two-dimensional nature of the expansion.

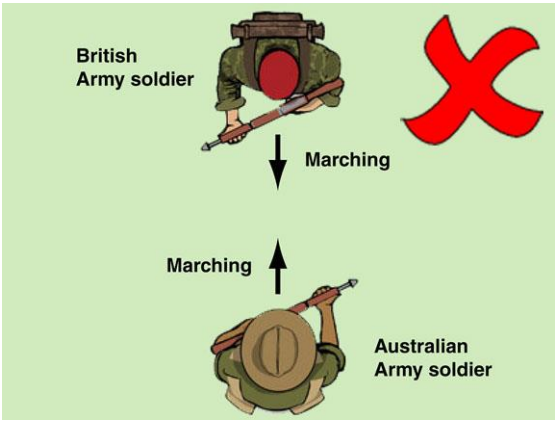


A shift to the left

Moving to the (~~right~~) left

- If all the quantum forces have the same direction of spin, then if one magnetic field approached another magnetic field, then to avoid a collision, the two quantum forces will move to the left of each other.
- Now, because all quantum forces like to exist in an evenly-spaced grid, if one quantum force moves to the left, then the whole grid will want to move to the left.
- Note: Nothing in the universe could have forced a quantum force to change its axis.

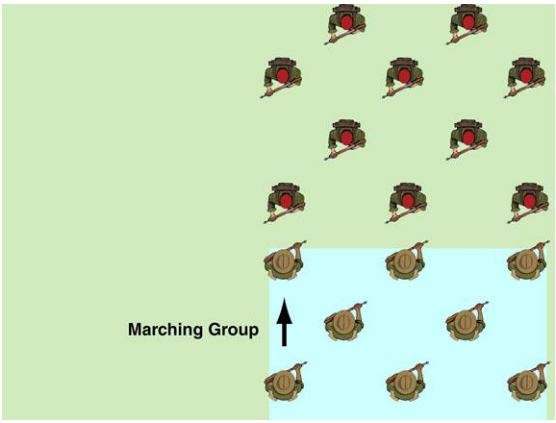
Marching group approaches a stationary group



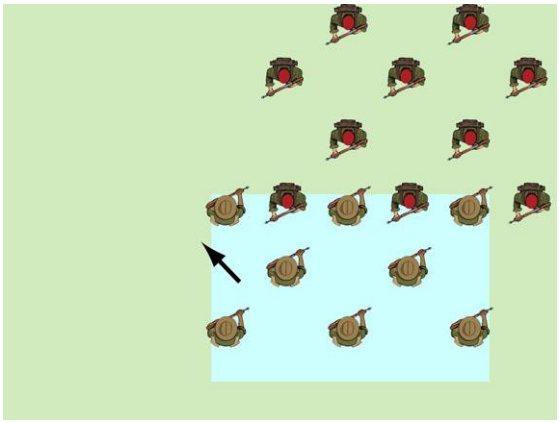
Step 'right' to avoid a conflict

Understanding the 'step-to-the-left' via a marching army analogy

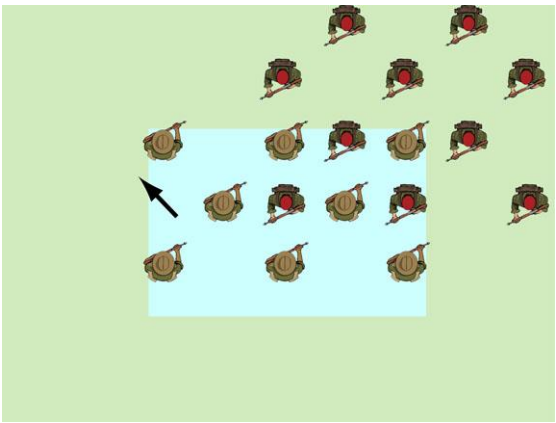
- When soldiers are marching towards each other, in order to avoid a collision, the two parties need to either step to the right of each other, or step to the left.
- However, if the approaching objects are spinning with a common axis of rotation, like quantum forces, then the direction of this step will be determined by their spin.
- The direction of spin of quantum forces was random, but now that the direction is chosen, it will remain.



Marching soldiers approach each other



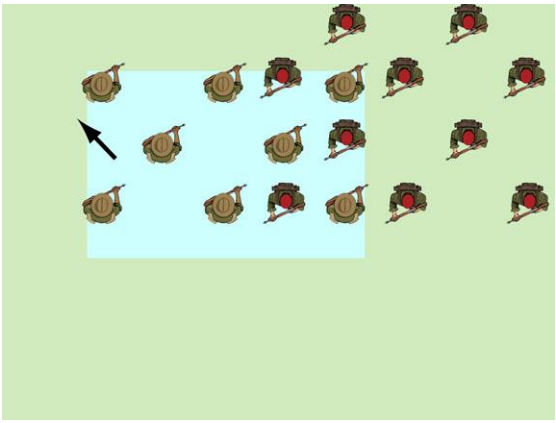
Step forward and to the left



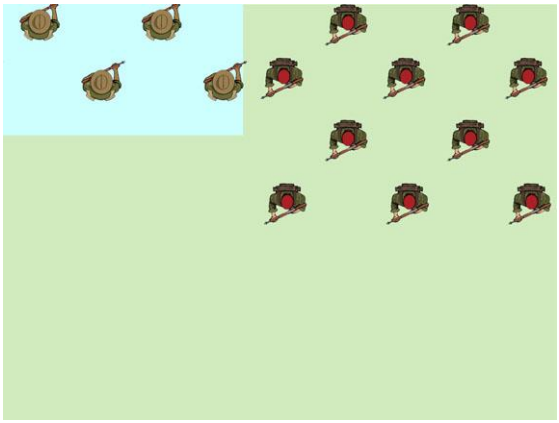
Step forward and to the left

Team work

- Because of the uniform spacing, where one team member goes, the rest of the platoon shall follow.
- If you had to mesh two table forks, then you would only need to focus on one tine on each fork—you know that if you mesh two of the tines correctly, the rest of the tines on each fork will also mesh correctly.
- The same thing applies to the quantum forces that make-up a magnetic field; if one quantum force goes left, then the rest of the quantum forces will follow.



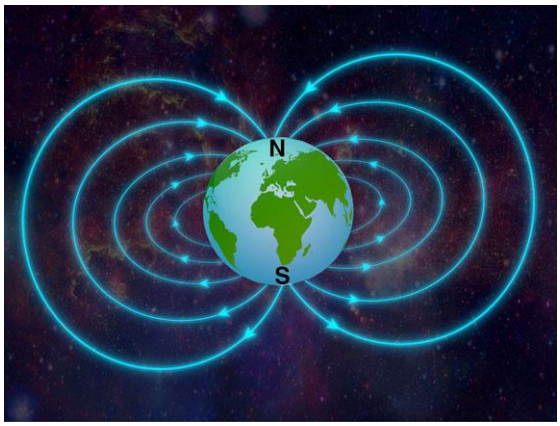
Step forward and to the left



The platoons are now separated

4. Earth’s Magnetic Field

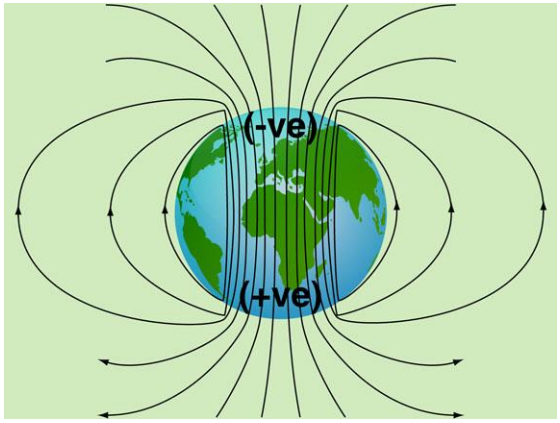
Introduction



Common representation of Earth's magnetic field

Current theory

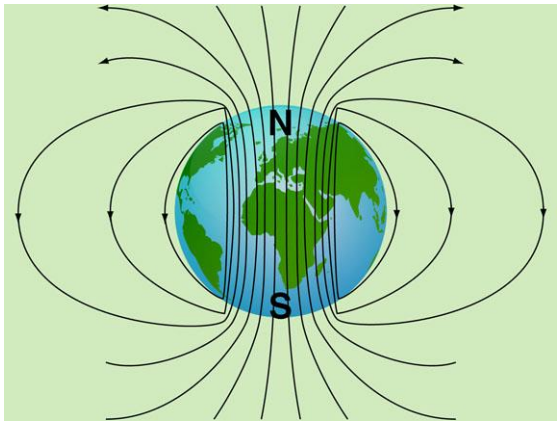
- In 2024, Wikipedia stated that:
  - *'The magnetic field is generated by electric currents due to the motion of convection currents of a mixture of molten iron and nickel in Earth's outer core: these convection currents are caused by heat escaping from the core, a natural process called a geodynamo.'*
- I am in no position to disagree with this statement.



Conventional direction of magnetic flow

The Earth acting as a large magnet

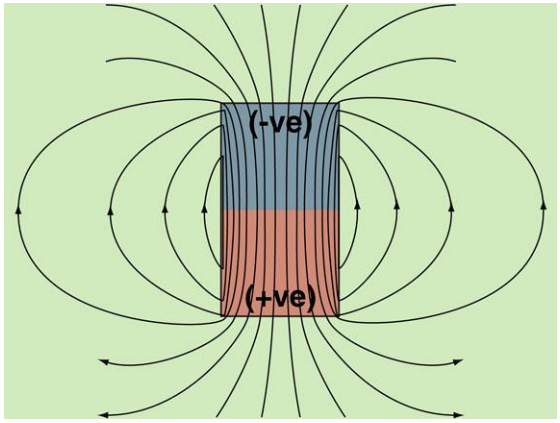
- If the Earth were a bar magnet, then Earth's North magnetic pole would represent the negative end of the magnet.
- This is because a free spinning bar magnet held on the surface of the Earth will rotate such that the positive end of the magnet will point towards the North magnetic pole, and we know that the positive end of a magnet always points to the negative end of another magnet; so, Earth's North pole is the negative end of the Earth magnet.



Actual movement of quantum forces

Actual flow of travelling quantum forces

- The position of the North and South magnetic poles, relatives to Earth's rotational axis can vary over a geological time scale.
- The magnetic poles can also reverse, with the North magnetic pole becoming the positive end of Earth's magnetic core.
- Just like a traditional magnet, the external flow of quantum forces outside the Earth is from the negative end (North pole) to the positive end (South pole).

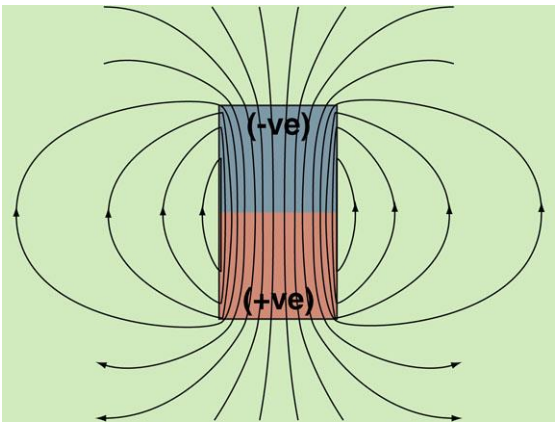


Conventional direction of magnetic flow

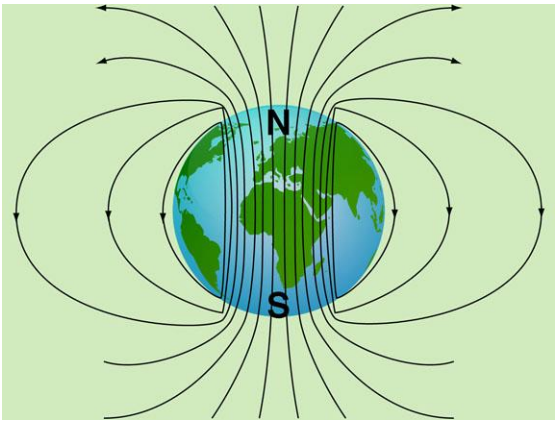
Traditional magnet

- Convention suggests that the magnetic flow (outside a magnet) is from positive (+ve) to negative (-ve), as shown here.
- This means that based on conventional flow, the North pole of the Earth should be referred to as the negative pole.
- However, the actual flow of quantum forces outside a magnet is the same as that for the Earth, which is from the negative to the positive (the opposite of what is shown here).

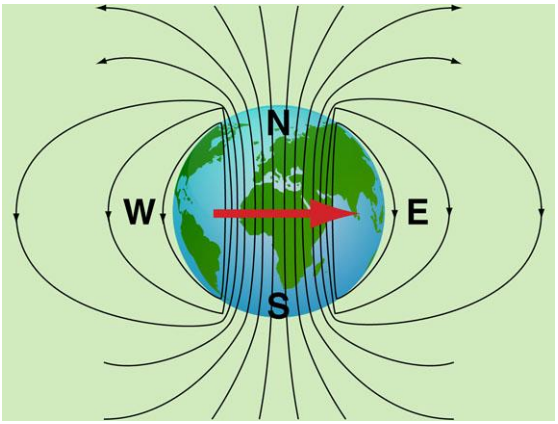
A spinning planet



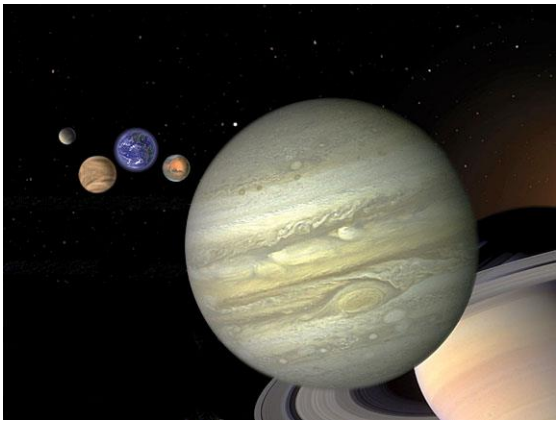
Conventional flow



Actual movement of quantum forces



The direction of the Earth's spin



Celestial bodies

Introduction

- So, an electric motor works because:
  - part of the motor holds a fixed magnetic field
  - a movable part of the motor carries an electrical current, which causes its attached quantum forces to move, which generates a moving magnetic field
  - when the movable magnetic field passes through the fixed magnetic field, the movable magnetic field is forced to step 'right' (based on conventional flow).

The Earth

- So, the Earth has:
  - a potentially movable (spinning) field of quantum forces attached to the Earth
  - a moving field of quantum forces attached to the Earth's moving core of molten iron and nickel
  - when the movable quantum forces attached to the Earth passes through the moving magnetic field, the movable quantum forces, which are attached to Earth, are forced to step 'left'. (based on actual flow).

The cause of Earth's spin

- Therefore, the Earth spins because it acts like a very large electric motor.
- The Earth has a flow of attached quantum forces that actually moves from the South pole to the North pole (i.e. the opposite of what is considered the conventional flow of a magnetic field).
- If the 'fixed' quantum forces that are attached to the various physical particles of the Earth 'step left', then this would mean the Earth would spin west to east!

Which celestial bodies spin

- The proposal that I have presented here suggests that only celestial bodies with an active magnetic field would spin as a result of this action.
- I am unaware of whether this is the case.
- However, it should also be noted that some smaller moons could develop a spin due to past asteroid collisions.