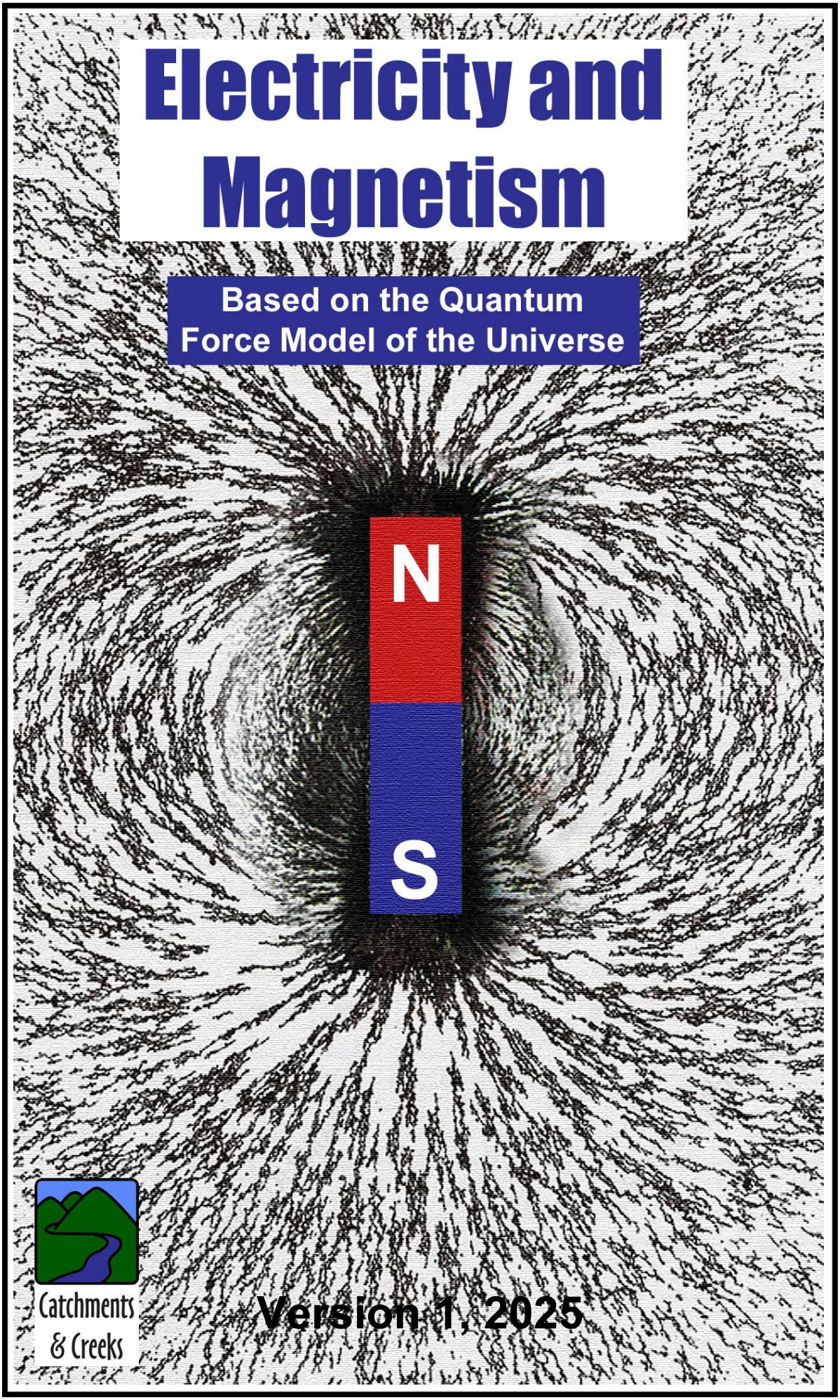
Electricity and Magnetism

Based on the Quantum Force Model of the Universe



Catchments & Creeks

Version 1, 2025

Electricity and Magnetism

Based on the Quantum Force Model of the Universe

Version 1, August 2025

Written and illustrated by: Grant Witheridge, *Catchments and Creeks*, Queensland, Australia.

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Cover: Iron particles marking out the flow path of the magnetic field.

The author

Grant Witheridge is a retired civil engineer with both Bachelor and Masters degrees from the University of New South Wales. He has over 40 years experience in the fields of hydraulics, stormwater management, creek engineering, and as a lecturer in coastal engineering.

Grant brings to this discussion an enthusiastic understanding of fluid mechanics and wave mechanics. What Grant does **not** bring to this discussion is any tertiary education or advanced knowledge of electricity or magnetism.

The purpose of this paper

There are three main reasons why I prepared this paper, those being:

- To complete my discussion on how a force-based model of the universe can explain the four know 'forces': gravity, magnetism, weak atomic interaction, and the strong atomic interaction.
- To demonstrate that the properties of electricity and magnetism can be explained without reference to 'charged' particles.
- To demonstrate that the spinning of planets can be explained by thinking of any planet that has a magnetic field, as just a large electric motor—in other words, to show that these celestial bodies have two forms of magnetic fields: the rotating magnetic field, and a stationary magnetic field that is formed from its attached quantum forces.

Since the moon does not have a magnetic field, its spin would have most likely have resulted from past impact forces.

Is it a paper, document or a field guide?

I have listed all of these publications under the heading of 'Field Guides' within my website simply because the first document that I published that used this type of page layout was produced as a field guide.

For me, a 'field guide' is a document that helps engineers form a connection between their office design manuals, and the real world. Field guides primarily perform the role of 'education', rather than as an everyday design manual. Field guides utilise pictures and diagrams more than design manuals.

Even though the target audience for this document is not engineers (unlike my other documents), it is still a document that is focused on 'education', and it predominantly communicates through the use of pictures and diagrams.

Contents

Introduction

I have been reluctant to write about magnetism because I believe the way magnetism has been discussed to date is one of the biggest disappointments of the scientific profession. In my opinion, the sciences have misrepresented our knowledge of magnetism to students.

Let me be very clear, the whole concept of positive and negatively charged particles is just a human invention. It has never been proven. It is just an invented explanation that has been used while we are waiting for the truth to be uncovered.

But, none of that represents any form of failure, because everything in the human language is invented, and every explanation we have is the best we have while we are waiting for someone to discover a better explanation. No; the failure is that we have written and talked about positive and negative charges so much that we are now telling students that it is the truth.

We should NEVER loose sight of the fact that there is nothing inherent to a negatively charged particle that makes it negative. If we wanted to, we could have called it the 'Fred' and 'Wilma' ends of a 'Flintstone', instead of the positive and negative ends of a magnet. Based on our current knowledge, both titles would be equally valid.

There is nothing wrong with developing a hypothesis, but we must be honest about the history and foundations of our knowledge. There is nothing wrong with not knowing why an action or outcome occurs. We have all witnessed the actions of magnets, and for now, it is fine to suggest that positive and negatively charges are the cause of magnetism, but we should never lose sight of the fact that this is just an invented force.

And why should you never loose sight of the questionable nature of charged particles; well, it is because if we treat a 'convenient explanation' as a 'proven fact', then we set the stage for young scientists to stop looking for the correct answer.

Back in my teaching days I use to use a saying: *'Once a statement has been written five time, it is now considered to be true, no matter how false the statement actually is.'*

Just because a statement is repeated many time, especially when repeated by people of influence, does not make that statement true (even in politics). We just need to be honest.

Speaking of being honest; in this document I will declare several times that electricity and magnetism are NOT within my area of expertise, and as such, you should treat all of this discussion with appropriate caution.

Unfortunately, the real consequences of this misrepresentation are yet to face us. If we make it clear to students and the general public that magnetism and atomic forces are the product of positive and negative charged particles, then when we discover that the real mechanics has nothing to do with positive and negative charges, it will be the 'sciences' that lose credibility. We will be busy back-peddling, trying to tell everyone that we had always known that the positive and negative explanation was just an interim explanation.

I believe that a better understanding of the science can be found through the adoption of a force-based model of the universe, rather than our current energy-based model.

However, in my opinion, the biggest scientific 'mistake' of all time is the belief that forces can be both attracting and repelling. A force is an applied action. An applied action can only be a repelling force, or pushing force. It is not logical, nor physically possible, for an attracting force to exist. Any reference to an observed attracting force is in reality an observation of a repelling force that is yet to be fully understood by the observer.

Even Sir Isaac Newton was uncomfortable in his conclusion that gravity was a force of attraction. There is no doubt that our general acceptance of 'attracting forces' extends from our observations of both gravity and magnetism. But it is a mistake to continue such a belief.

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.

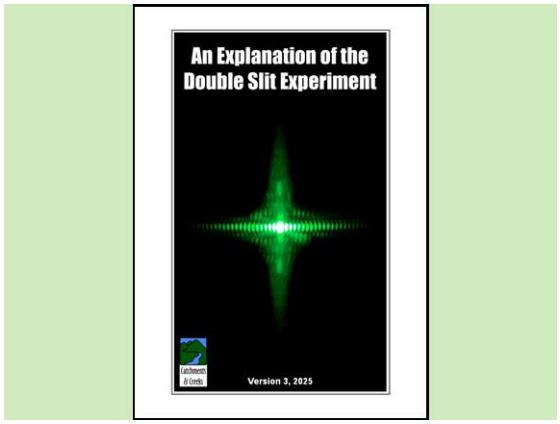
I cannot prove that what I am presenting here is true. However, I do believe that the quantum force model of the universe can be used to explain all aspects of electromagnetism, including the development of Earth's magnetic field, the cause of planetary spin, and the ability of Earth's magnetic field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

Why should you trust what I have to say?

Water engineer

Introduction

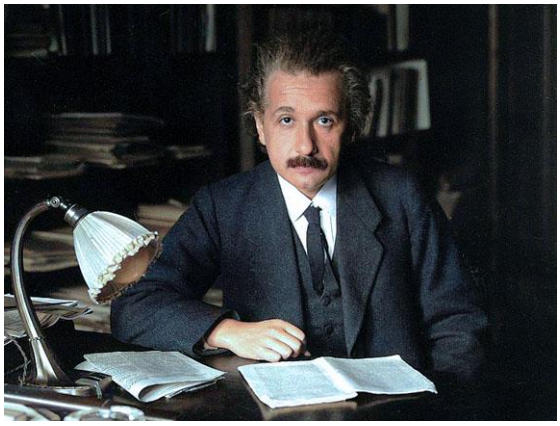
- Just to make things very clear, I am not a scientist, I am a retired civil engineer who specialised in the study of fluid mechanics.
- I have no formal training in electricity or magnetism, in fact, I even had to slow down my typing in order to make sure I spelt those two words correctly.
- So why,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



Double Slit Experiment, Version 3

My knowledge of fluid mechanics

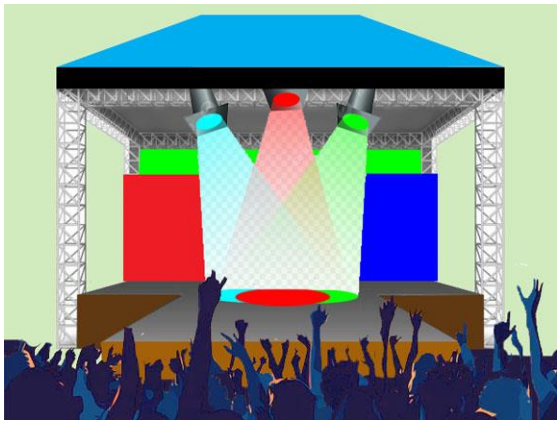
- It is my knowledge of fluid mechanics and wave mechanics that has allowed me to spot errors in Einstein's explanation of light.
- It is also my knowledge of fluid mechanics and wave mechanics that has allowed me to provide a rational explanation to the double slit experiment, and the triple filter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



Albert Einstein

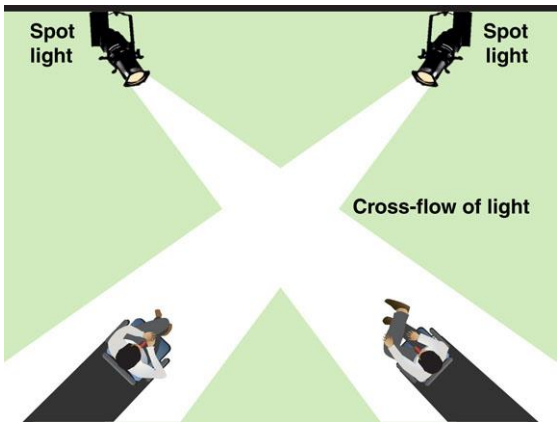
Einstein's explanation of light

- 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.

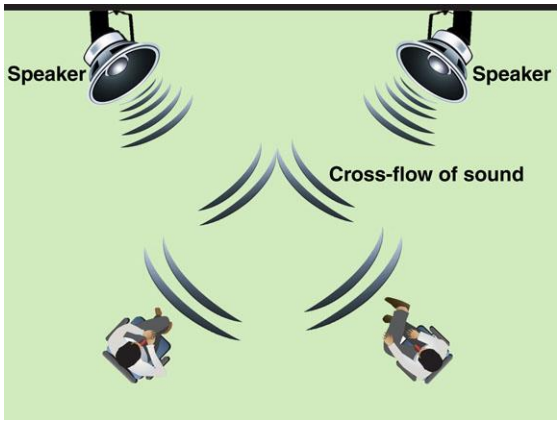


Spot lights

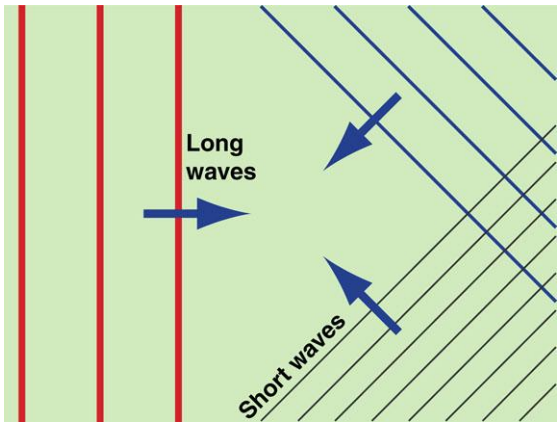
Energy waves



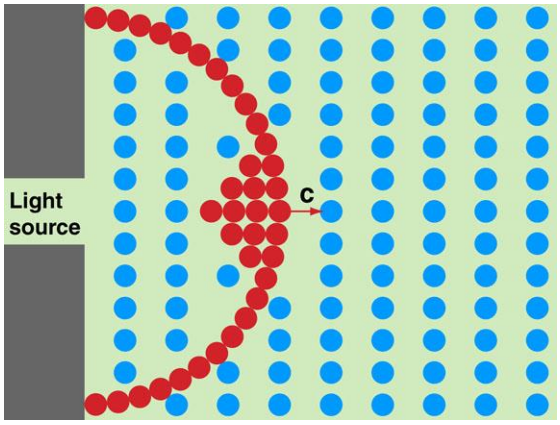
Spotlights



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

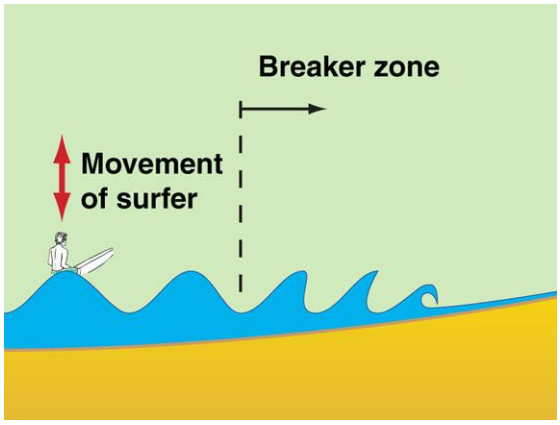
- A photon is believed to be a 'particle' because only a particle can move through a true vacuum, and it is currently believed that 'space' contains large regions of empty space.
- However, what I hope to demonstrate is that 'space' is not empty, but is in fact a continuum of quantum forces.
- I believe 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

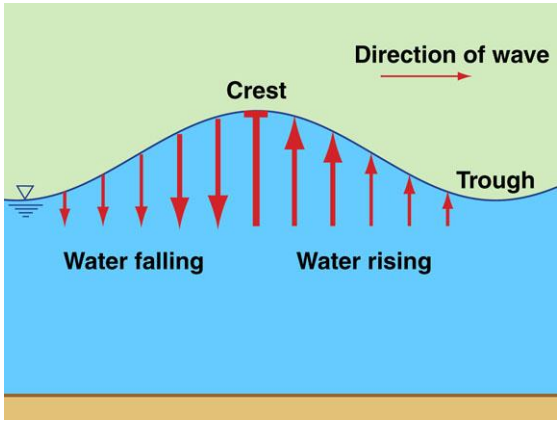
- A particle wave transports both energy and physical matter.
- Examples of particle waves include:
  - broken coastal waves
  - tsunami waves travelling over land
  - weather fronts.
- A particle wave cannot experience constructive or destructive interference.
- Consequently, two surf waves will 'crash'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



Ocean waves (on the left)

Deep water ocean waves

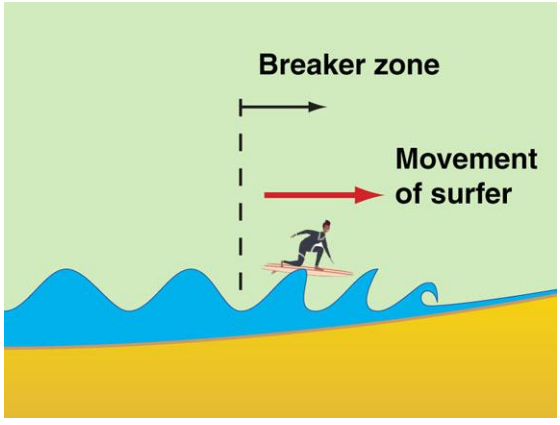
- A deep water ocean wave experiences only virtual horizontal movement, not physical horizontal movement, the same as the 'pointer' on your computer screen; it just appears to move.
- The term 'deep water' refers to the wave length relative to the water depth.
- The 'profile' of an ocean wave moves, 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.

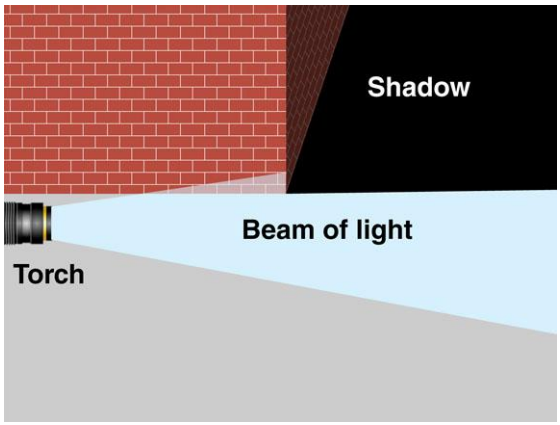


Breaker (coastal) zone (on the right)

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.

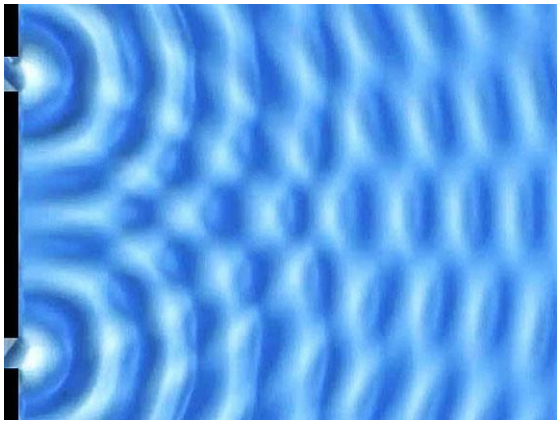
So, what did Einstein believe that was so wrong?



Minimal diffraction of light

A photon

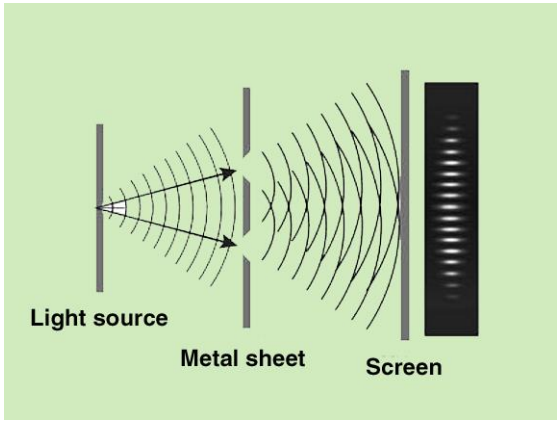
- Einstein believed that a photon was a massless particle partially because:
  - he believed that 'space' contained large regions of empty space (true vacuum)
  - he believed that only a physical particle could travel through a vacuum
  - he was aware of experiments showing that light displays the properties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

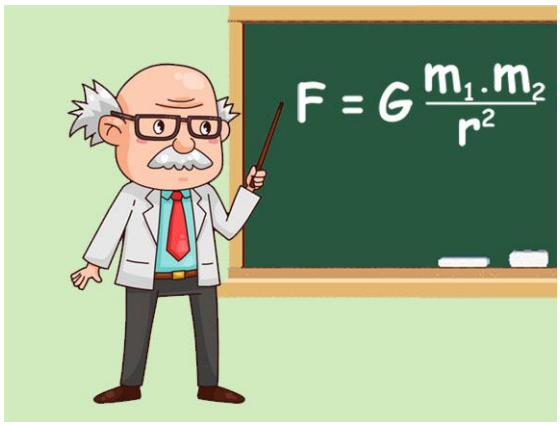
- As discussed on the previous page, if Einstein were correct in defining a photon as being a massless particle, then a ray of light would not be able to experience constructive or destructive interference.
- However, the double slit experiment demonstrates that photons, and rays of light, do experience 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.

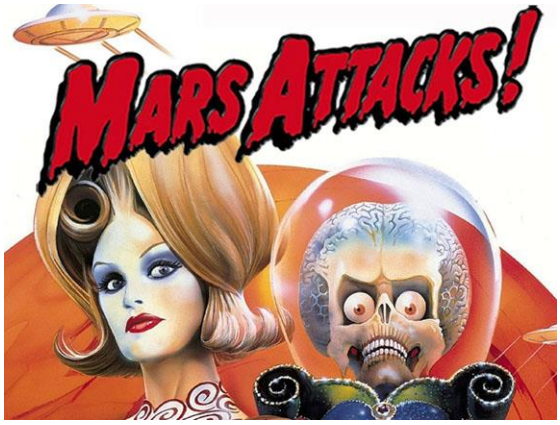
But, Einstein proved his work with mathematics!



Mathematics

The truth about mathematics

- But you say: *Einstein proved his work mathematically!*
- Well, mathematics is just the numerical modelling of an action, but like any 'model', its value to society depends on how it is used.
- In my opinion, mathematics can be both a tool of great discovery, as well as a cloak of disguise hiding the truth from the audience.
- Consider the following . . .



Mars Attacks (1996)

Investigating the cause of human propagation

- Aliens arrive on planet Earth and they wish to discover the cause of human propagation.
- One of the aliens observed that the birth rate in any city is proportional to the number of bananas sold in that city.
- The aliens considered the facts and concluded that: 'male humans use bananas to impregnate female humans'.
- They 'proved' this with mathematics!

Bananas

Further investigations

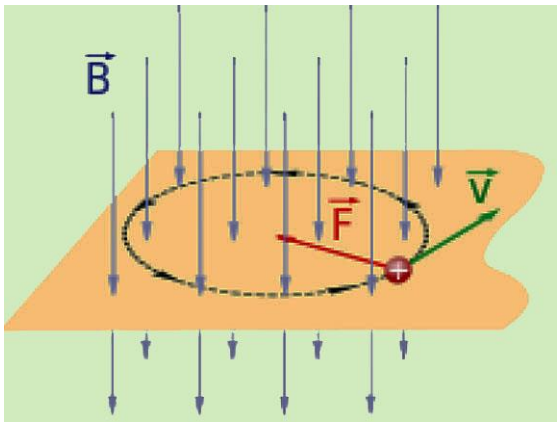
- Further investigations enlightened the aliens to additional facts:
  - young men buy and consume more bananas that older men
  - most bananas are purchased by women
  - the lower the cost of bananas, the more bananas are consumed
  - bananas come naturally with a protective sheath, which is removed before consumption.

The universe

Energy model vs force model

- The current energy-based model of the universe, and my proposed force-based model of the universe, are both anchored in the same basic science (physics).
- Energy acts through the application of forces, and forces act with the fuel of energy.
- If we move from an energy-based model to a force-based model, then nothing in science will actually change, except to our explanation of the science.

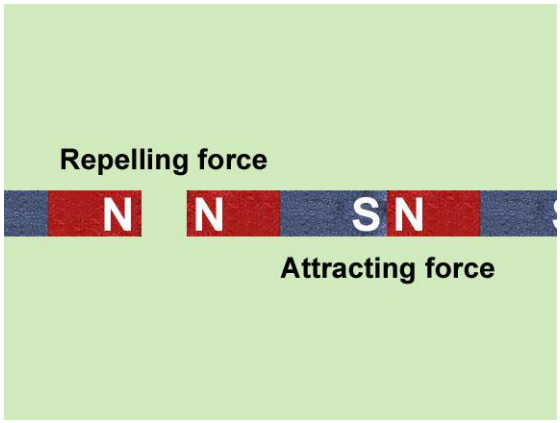
Things that are ‘wrong’ with our public explanation of magnetism



The generation of a force

The Lorentz force law

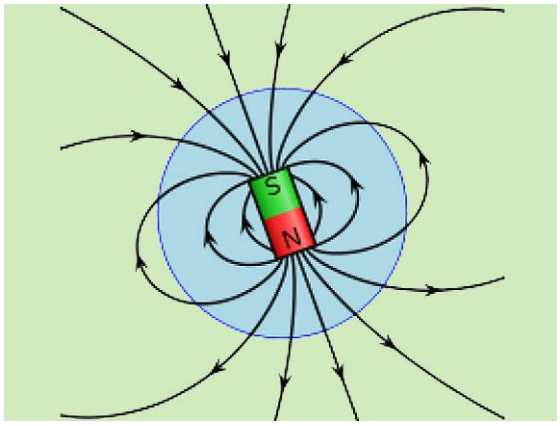
- In the 2025 explanation of a Magnetic Field, Wikipedia states in its opening paragraph:
  - *‘A moving charge in a magnetic field experiences a force perpendicular to its own velocity and to the magnetic field.’*
- But the facts are that a force is not always produced—a moving charge can pass through a magnetic field without a force being produced—it depends on the velocity of the moving charge, and I mean its speed and direction.



Pulling force

Pulling forces

- In the 2025 explanation of a Magnetic Field, Wikipedia states in its opening paragraph:
  - *‘A permanent magnet 's magnetic field pulls on ferromagnetic materials such as iron, and attracts or repels other magnets.’*
- But the facts are that there is no such thing as a pulling or attracting force.
- A magnet does NOT pull on a piece of iron—a piece of iron is pushed.



Magnetic field

Magnetic fields

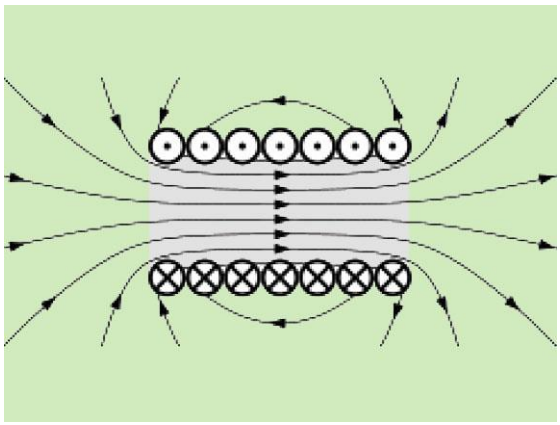
- In the 2025 explanation of a Magnetic Field, Wikipedia states:
  - *‘Magnetic fields are produced by moving electric charges and the intrinsic magnetic moments of elementary particles associated with a fundamental quantum property, their spin.’*
- I believe that a magnetic field is generated by the movement of quantum forces attached to the moving electrons, and it has nothing to do with their ‘spin’.

Solar winds

Solar winds

- Numerous publications state that solar winds consist of charged particles, which are deflected by Earth’s magnetic field.
- However, the reality is that there is no ‘charge’ to any of these particles.
- The solar winds are simply compression waves of concentrated quantum forces.
- These quantum forces are deflected by Earth’s magnetic field, which is formed from the same quantum forces.

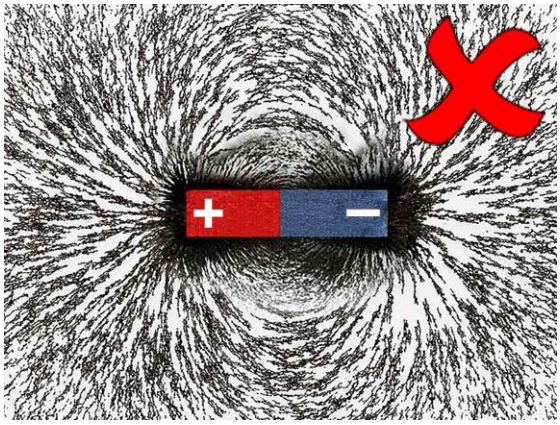
Things that are ‘wrong’ with our public explanation of magnetism



Solenoid

Statement by others

- The following statement (in various forms) has been made by several authors:
  - *‘Electric charge is the physical property of matter that causes it to experience a force when placed in an electromagnetic field.’*
- I disagree with the wording of this statement, and below I present three reasons for my disagreement.



Arbitrarily assigned +ve and -ve ends

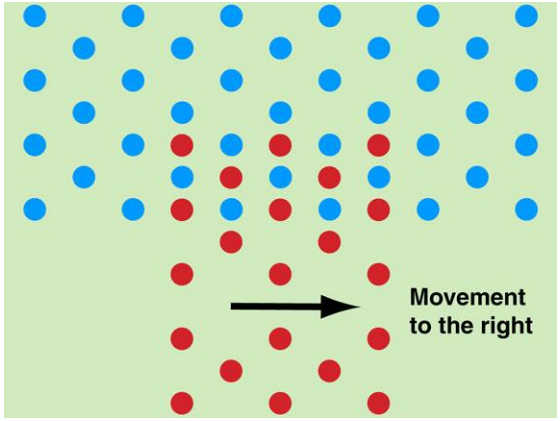
Reason 1

- Particles are arbitrarily labelled either positive or negative based on an electron being considered negatively charged.
- Meaning that if the number of electrons exceeds the number of protons, then the particle is considered to have a negative charge.
- However, there is nothing inherent to a negatively charged particle that makes it negative—it is effectively just a count of electrons.

A smoking electric motor

Reason 2

- If it were true that a charged particle will always experience a force, then such a force would continue to exist even when an electrical motor had reached its equilibrium angular velocity.
- This would mean that all electrical motors would continue to increase their angular velocity until something broke.
- Instead, this force approaches zero as the angular velocity approaches its equilibrium value; so, a force is **not always** present!

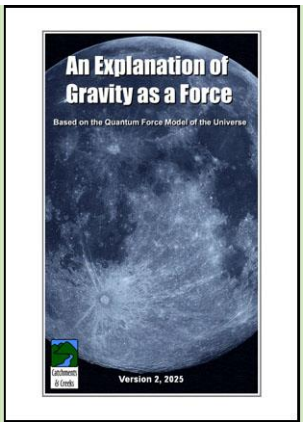


Movement of a magnetic field

Reason 3

- The statement is misleading because the truth is that a movable magnetic field will experience a lateral force if it attempts to pass through a fixed magnetic field at an angular velocity that is less than the critical **angular** velocity.
- The ‘force’ is not acting on the electrical charge, but instead on the magnetic field attached to the electrical charge.
- This discussion is expanded in the Chapter 5 – Magnetism.

Related Catchments and Creeks documents



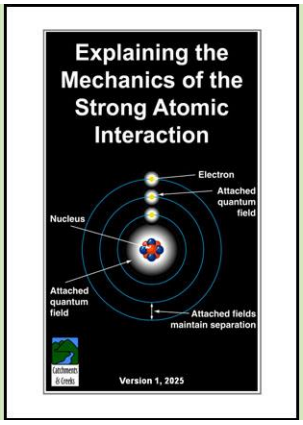
Explanation of Gravity as a Force, 2025

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

Catchments & Creeks, 2025, Bargara Queensland.

Version 1, November 2024.

Version 2, August 2025.



Atomic Interaction, 2025

Explaining the Mechanics of the Strong Atomic Interaction

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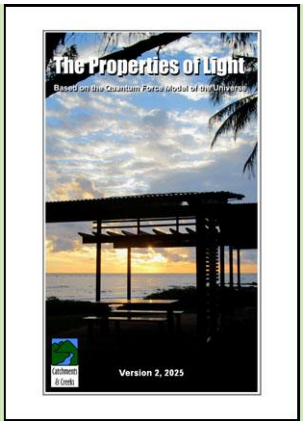

The Properties of Light, 2025

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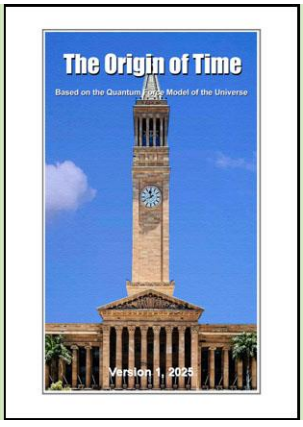


The Origin of Time, 2025

The Origin of Time

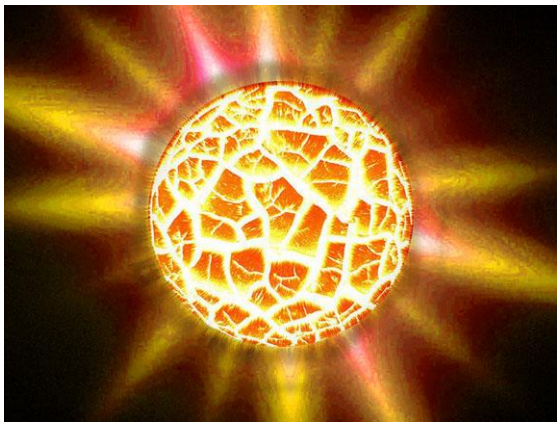
Catchments & Creeks, 2025, Bargara Queensland.

Version 1, August 2025.

This document replaces a 2024 document titled: *'Time, Temperature and Aging'*.

1. A New Appraisal of Space

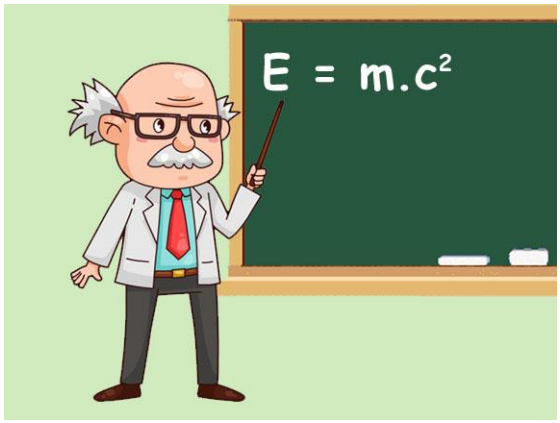
Introduction



The Big Bang

Introduction

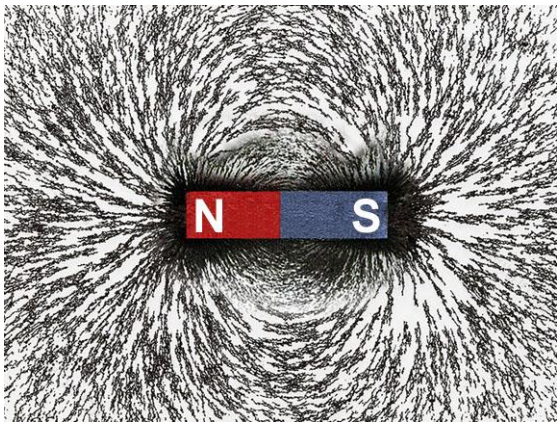
- The energy-based model of the universe has served us well for over 100 years.
- However, this model has failed to answer several questions about the physics of the universe.
- If, instead of imagining a universe filled with energy, we were to considered a universe filled with forces, then we would develop a force-based model.
- Both models can be 'correct' if applied correctly.



Energy, mass and velocity

Energy vs forces

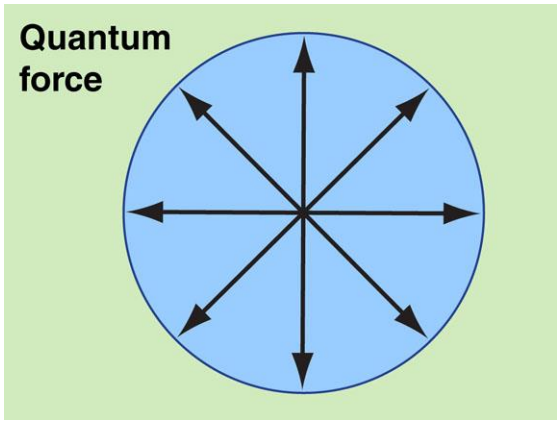
- We do not consider energy as being made of physical matter, rather that physical matter is made from concentrated energy.
- This means matter can be converted back to pure energy, as described in Einstein's energy equation: $E = m.c^2$.
- Similarly, we do not think of a 'force' as being made from physical matter, rather that physical matter is just an instrument through which a force can be applied.



Magnetic field of influence

Magnetic force

- Magnetic forces may at first appear to fall outside a force-based model, but in fact they do fit with a force-based model.
- With magnetic forces, the action does not require the direct contact of physical matter in order to transfer a force.
- What I hope to demonstrate in this paper is that a magnetic field is just a flow of concentrated aether (the stuff that fills space)—it moves because physical matter (electrons) are moving.

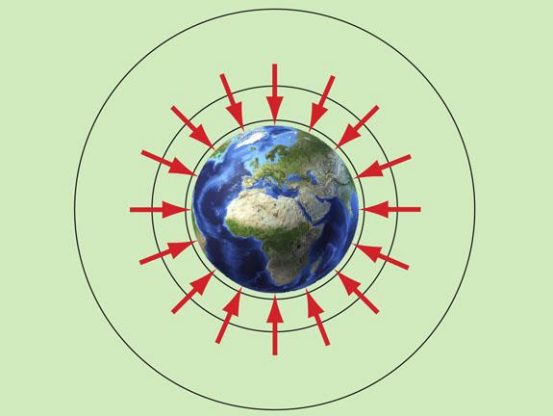


Sphere of influence of a quantum force

Does a 'force' have dimensions?

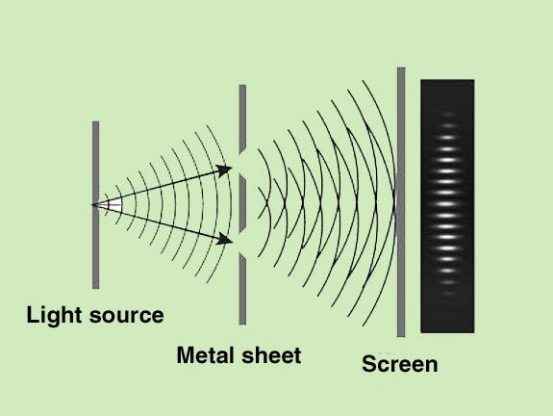
- A baseball has dimensions.
- A chair has dimensions.
- But what are the dimensions of a force?
- What are the dimensions of a unit of magnetic force?
- Maybe, a force does not have dimensions, which means an infinite amount of force could exist without any dimensions, such as in the singularity that we assume existed just prior to the Big Bang.

A force-based model of the universe

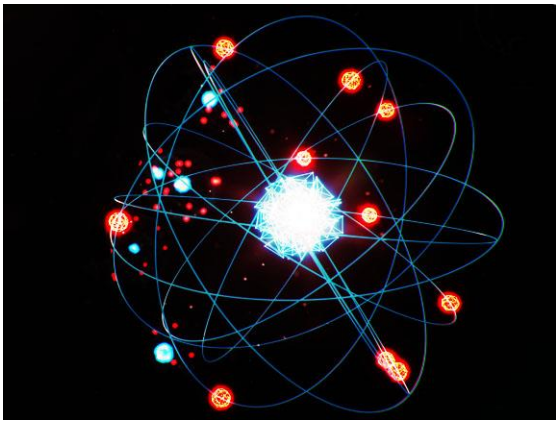


Gravity

Spinning Earth



Double slit experiment

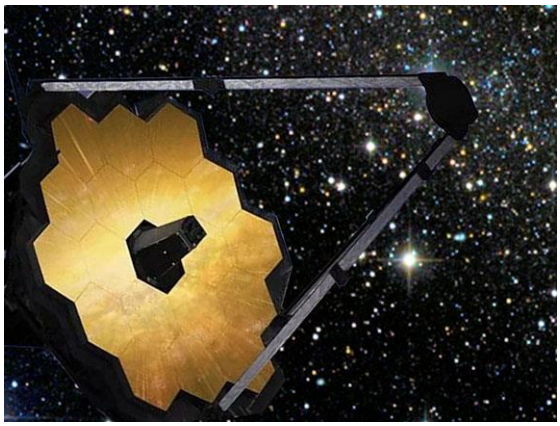


Atom

The benefits of a force-based model of the universe

- A force based model of the universe can provide us with a clear and logical explanation of the following scientific questions:
  - an explanation of gravity
  - why there is no such thing as a 'pulling' force, nor a 'force at a distance'
  - an explanation of what a magnetic field is made of
  - an explanation of why a magnetic field always moves to the right when passing through another magnetic field
  - what allows certain elements to become magnetic
  - what causes stars, planets and moons (that have a magnetic field) to spin
  - what causes Earth's magnetic field to deflect solar wings
  - what causes return spaceships to deflect of the Earth's 'atmosphere' if they approach at an acute angle
  - the properties of light
  - an explanation for the outcomes of the double slit experiment
  - an explanation for the outcomes of the triple filter experiment
  - what allows us to see stars clearly form any location
  - the reason why the force of gravity reduces with the square of the distance of separation
  - the reason why electron can only exist at certain radiuses from the nucleus
  - the force that causes an electron to stay in orbit around a nucleus
  - the reason why the universe expanded primarily in two dimension rather than three dimensions
  - a possible reason for changes in the rate of expansion of the universe over time.
- Can the current energy-based model of the universe make the same claim?
- Not all of the above explanations are discussed in this paper.

Consider the following



James Webb telescope

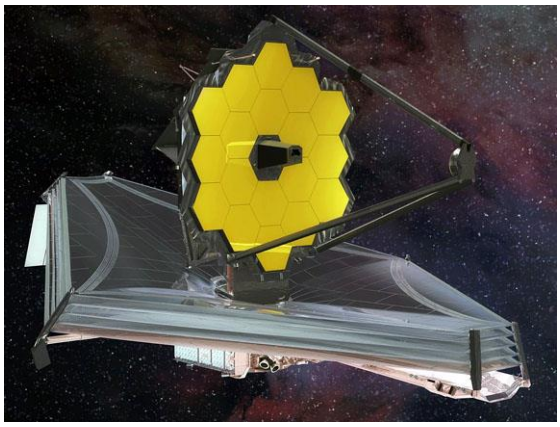
Introduction

- Let us consider the James Webb telescope—I am sure you have all seen the telescope's images.
- No matter how close the telescope zooms into a star field, there is always more, and more, objects generating light.
- Billions and billions of stars and galaxies sending a 'ray' of light to a single location in the universe; i.e. the location of the James Webb telescope.

Star field

Light travelling through space

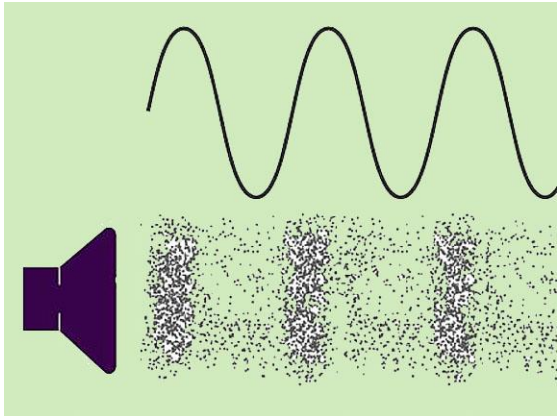
- Now consider that if a telescope can see billions of lights, then those sources of light must be sending a constant stream of photons to the telescope's location.
- AND, each of those rays of light must be travelling billions of light years without being deflected by other rays of light.
- YES, light may bend as it passes matter, and in theory, light could eventually loop around the universe, meaning that as we look into space, we could be looking along a constant loop around the universe (?).



James Webb telescope

Stand anywhere is space

- Now consider the fact that it does not matter where the James Webb telescope is positioned in space, it will always 'see' those billions and billions of lights.
- This means that each ray of light will not only be travelling billions of light years through space, but will also be passing through billions of other rays of light before arriving at the James Webb telescope.
- If interference did occur, then all these star field images would be very blurred.



Sound waves

How do they do it?

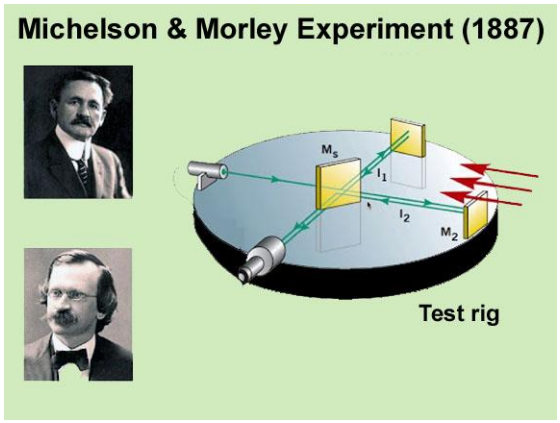
- How do billions and billions of massless photons pass through billions and billions of massless photons without experiencing any change of direction or loss of energy?
- They can do it because light does not travel as a massless photon, but as an energy wave (or force message).
- Just like sound waves—there is no real forward movement of the media, there is just the movement of energy, while the media simply vibrates.

So, why did Einstein believe that light travelled as a massless photon?

‘Empty’ space

Introduction

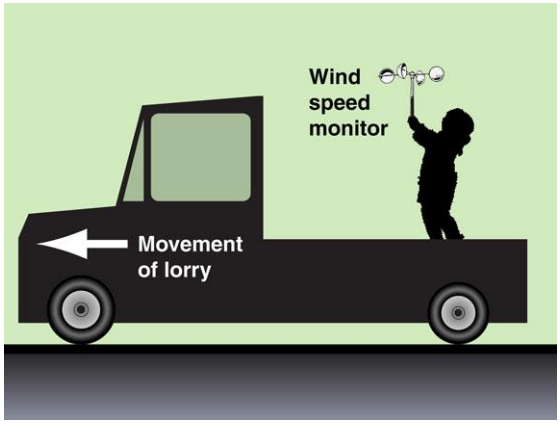
- For the past 100 years, science has held the position that space contains large regions of ‘empty space’.
- Prior to this, many scientists believed that space was filled with a substance commonly referred to as aether (ether).
- The idea of an aether-filled space was dismissed in 1887 by two American physicists Albert Michelson and Edward Morley—but were they right in their conclusions?



Michelson–Morley experiment

Michelson–Morley experiment

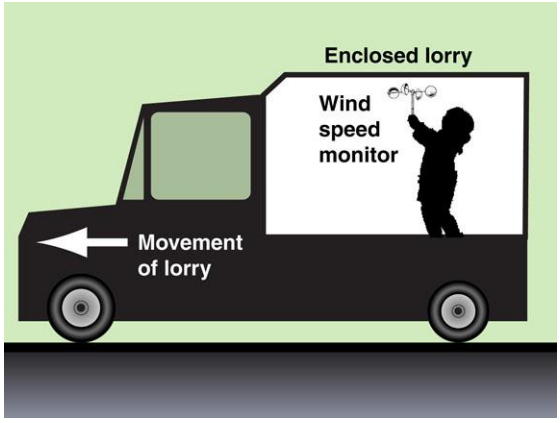
- The Michelson–Morley experiment looked for evidence that the speed of light was affected by the speed of the Earth as it travelled through space.
- Their experiment found no effect on the speed of light, and from this non-outcome they concluded that space was not filled with some type of matter.
- So, why do I think they got it all wrong?



Open lorry

Imagine testing the speed of a truck by measuring the air speed

- If a person stood in the back of an open lorry, while holding a wind speed monitor, then the air speed that they measured would provide an indication of the speed of the lorry.
- The measurement would not be perfect, but you get the idea.
- The lorry is moving through a form of media, and your wind speed monitor is moving through the same media.



Covered lorry

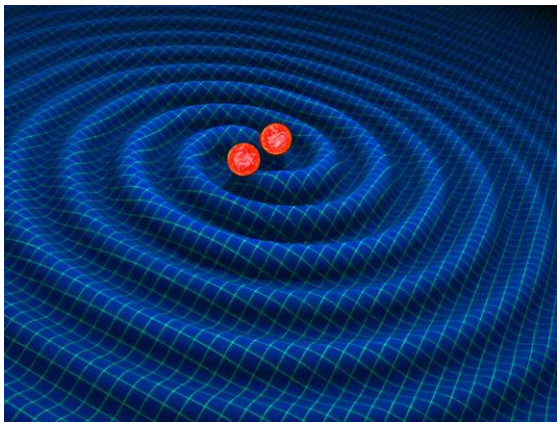
Now, perform the same test in an enclosed lorry

- However, if you repeated the test, but this time you were in an enclosed lorry, the air would be travelling with the lorry, and your monitor would measure zero air speed.
- This is what I believe is happening in the Michelson–Morley experiment.
- The Earth travels in a cocoon of attached quantum forces (aether), just as electricity travels inside a cocoon of magnetic forces (also aether).

The movement of gravitational waves

The action of gravity

Ocean waves



Representation of gravitational waves

LIGO Livingston Observatory

Introduction

- We can argue about whether gravity is, or is not, a force; but, we should all agree that gravity causes a different action on free objects relative to fixed objects.
- If gravity is a force, then the action is on free objects, where as, if gravity is not a force, then the action is on fixed objects.
- Gravitational waves travel vast distances through space and cause minor variations in the local strength of gravity as they pass through any given location.

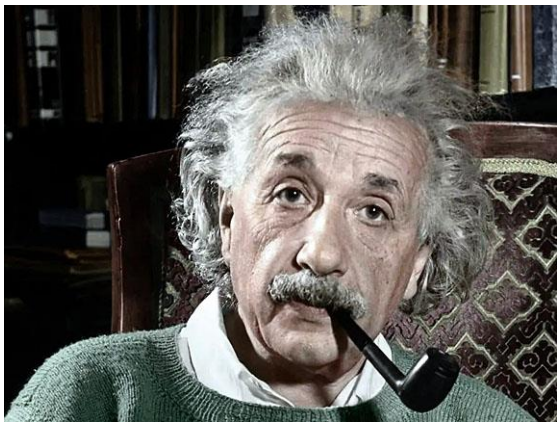
Ocean waves and tidal waves

- In order to understand the effects of gravitational waves on the local gravity, we can consider the effect of tides (tidal waves) on ocean waves.
- Ocean waves are mostly generated by wind friction, which causes a local rise and fall in the ocean's surface.
- Tidal waves are variations in the ocean's surface elevation generated by the proximity of celestial bodies, which move as long waves around the Earth's surface.
- If the 'action' is taken as the rise and fall of the ocean surface, then we can see that both ocean waves and tidal waves can independently cause such an action.
- Now, the local effects of oceans waves on water levels can be amplified or reduced by the effects of tidal waves.
- Similarly, the local effects of gravity on the acceleration of free objects can be amplified or reduced by the effects of gravitational waves on these same objects.
- The cause of gravity and gravitational waves may be different, but their actions are similar.

From gravitational waves

- The first direct observation of gravitational waves was made in 2015, when a signal was received by the LIGO gravitational wave detectors in Livingston, Louisiana, and in Hanford, Washington, USA.
- A gravitational wave is an energy wave, which means it cannot travel through a true vacuum—it needs a media.
- The detection of gravitational waves confirms (for some of us) the existence of a continuous media that fills space.

What does all of this mean?



Albert Einstein (1940s)

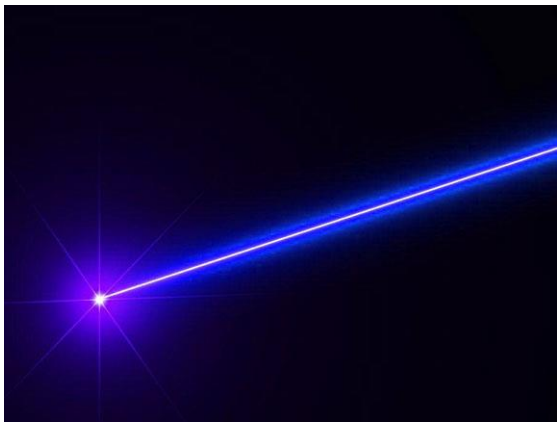
Introduction

- What all of this means is that we have Albert Einstein, with one of the greatest minds this world has even know, being a subject of his time.
- Einstein lived in the early 20th century.
- He was a mathematician and physicist; but, not a fluid mechanics expert.
- He did not have access to the scientific knowledge had we have today, and he lived at a time when the idea of a spaced filled with a substance was being questioned.

Space

Space is a continuum

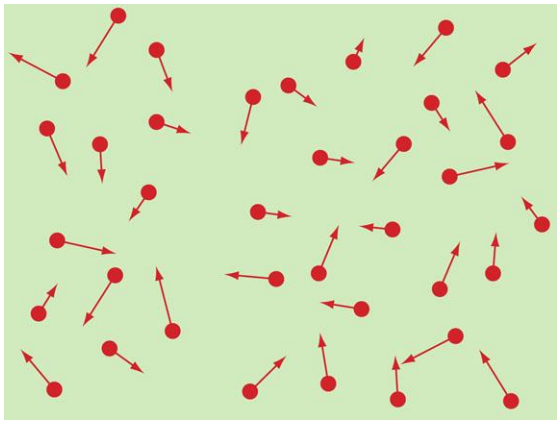
- There is enough evidence today to suggest that space is:
  - a continuum filled with an unknown substance (which we call 'aether')
  - the Big Bang consisted of a rapid expansion of this substance, which continues today (yes, the very silent Big Bang is still occurring), and
  - the universe continues to expand because this unknown substance continues to expand.



Laser light

The properties of light

- If space contained large regions of 'empty space', then light would need to consist of an independent physical substance in order to pass through these voids.
- This would support the idea of a photon is a massless particle.
- However, if we can accept the idea of space being a continuum of an unknown substance, then that supports the idea of light being an energy wave, and the idea of gravitational waves.



Forces shown here in a random pattern

A universe filled with energy or forces

- Our current understanding of the universe is based on the idea that at the time of the Big Bang, the universe consisted of only energy, space, and time.
- This concept can be termed an energy-based model of the universe.
- However, what would happen if we replaced the concept of an energy-based model with a force-based model.
- Energy does work through the actions of forces, so a force-based model would be no different from an energy-based model.

2. Mass, Inertia and Momentum

Quantum forces enable our five senses

How do I know matter exists?

Our five senses

- Our perception of physical matter is based on our five senses:
  - we see matter
  - we hear matter
  - we smell matter
  - we taste matter
  - we touch and move matter.
- These senses are a product of forces, which are ultimately generated by quantum forces, which have no physical existence, thus matter has no physical existence.

Human eye

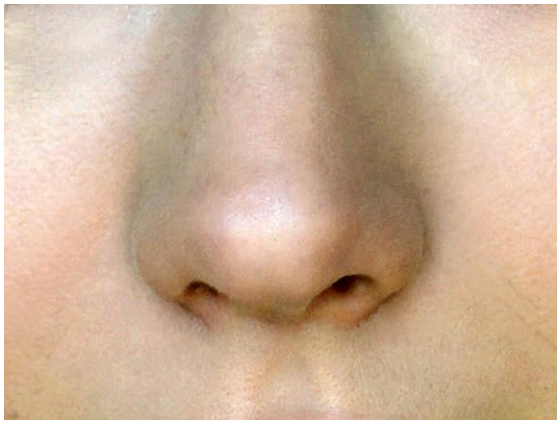
Light

- The sensation of light is **only** produced within the minds of living creatures.
- Light becomes visible to humans because the photons are capable of causing physical excitation within all molecules, which leads to changes in the chemistry within the visual molecule retinal of the eye.
- Light is just a form of energy.
- Therefore, the universe exists in total darkness.

Human ear

Sound

- The sensation of sound is **only** produced within the minds of living creatures.
- A falling tree produces only fluctuations in air pressure, which are detected by our ears, which sends an electrical signal to our brain, and only then is a sound created.
- There was no Big BANG, just a big expansion!
- Therefore, the universe exists in total silence.



Human nose

Smell

- The sensation of smell is **only** produced within the minds of living creatures.
- Gases with a chemical composition that can be registered by receptors within the nasal cavity, cause an electrical message to be sent to the brain, which creates the sensation of either a good or bad odour.
- The answer to the question: *Who made that smell?* is always, YOU!
- Therefore, the universe exists without a smell.

Quantum forces enable our five senses

Spices

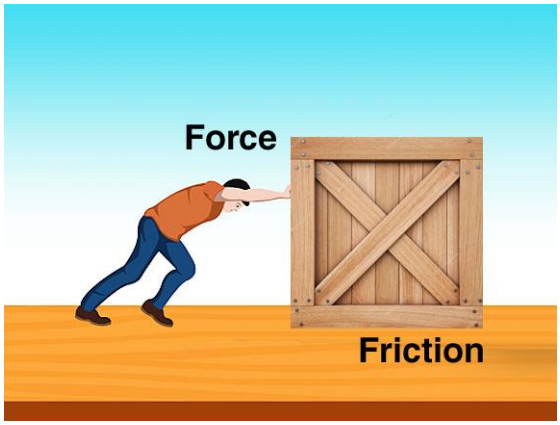
Taste

- The sensation of taste is **only** produced within the minds of living creatures.
- Taste is the perception produced, or stimulated, when a substance in the mouth reacts chemically with taste receptor cells located on taste buds in the oral cavity, mostly on the tongue.
- Humans can detect five taste modalities: sweetness, sourness, saltiness, bitterness, and savouriness.
- Therefore, the universe exists without taste (flavour).

Lava

Heat

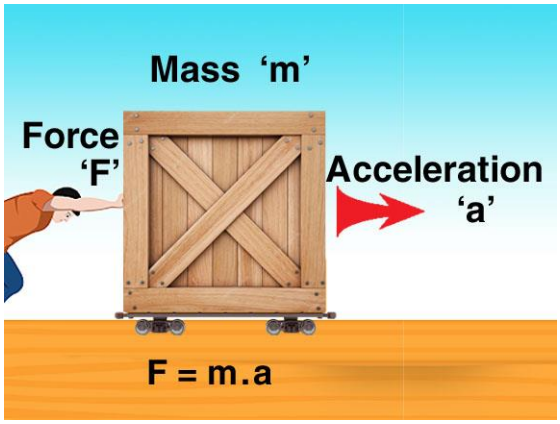
- Heat is a sensation that relates to the sensation of touch.
- Heat involves a transfer of energy, and sometimes a transfer of matter, which is just another form of energy.
- But ultimately, heat is made up solely of energy, which is made up of 'nothing' physical.
- The feeling of heat is created in the brain, while the action of heat is a product of energy acting through forces.



A repelling or pushing force

Touch

- Objects that we have traditionally been referred to as 'matter' cannot touch each other at a molecular level.
- It is said that molecular repulsion prevents any direct contact from occurring.
- This means that you have never actually touched any physical matter.
- The sensation of touch is generated by repelling forces, which can cause a deflection in the touched and/or touching surface, but it is the brain that registers this touch.

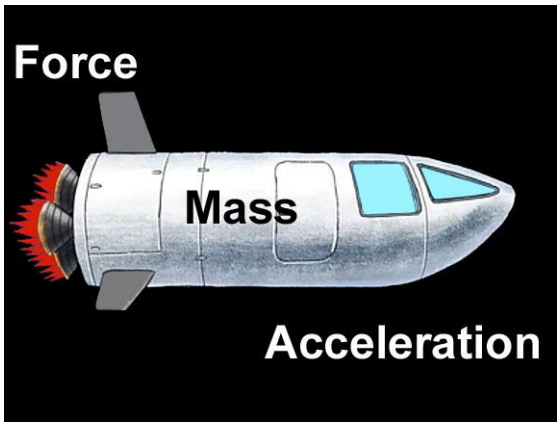


Force, mass and acceleration

Mass, inertia and momentum

- The effects of mass, inertia, and momentum are not created in the minds of humans, but instead exist in the reality of the universe.
- However, the effects of, or the perception of, mass, inertia and momentum, are generated by quantum forces, just as the perception of physical matter is generated by quantum forces.
- But, what is so magical about all of this is the fact that the force that creates inertia is the same force that creates gravity.

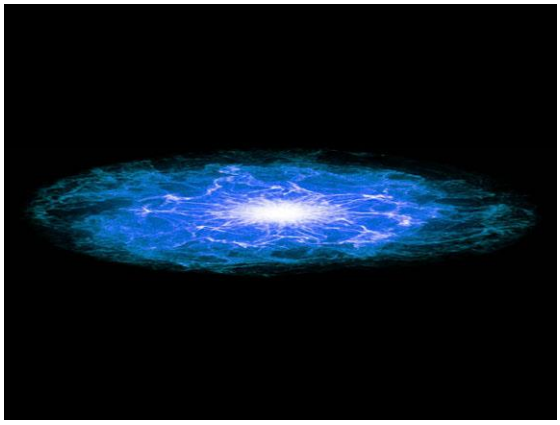
The link between the force of inertia and gravity



Acceleration of a spaceship

Introduction

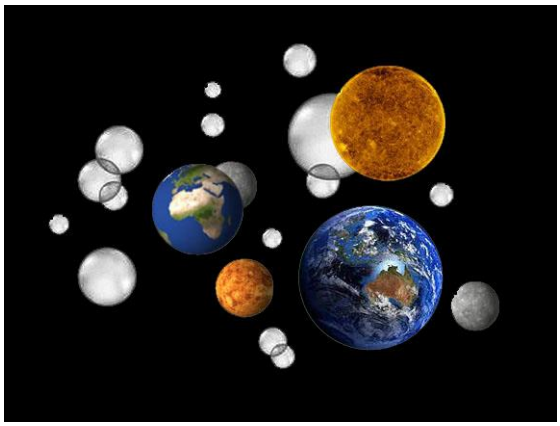
- The actions of inertia and momentum tell us that a force is required in order to change the speed or direction of an object of mass.
- Newton's second law of motion effectively states:
  - The vector (directional) force (F) required to cause an acceleration (a) of a body with mass (m) is equal to the product of the object's mass times its acceleration (i.e. F = m.a).



Representation of the Big Bang

Physical matter and quantum forces

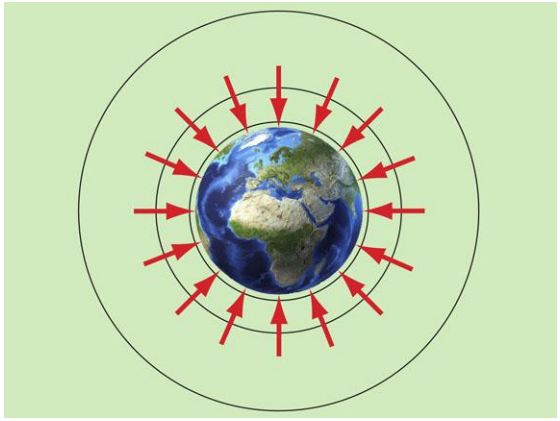
- If we can accept that physical matter is formed from compressed quantum forces.
- And we acknowledge that physical matter experiences the effects of mass and inertia, then we must accept that a signal quantum force (which forms matter) must also experience the effects of mass and inertia.
- This means that at the time of the Big Bang, the universe resisted the force of expansion, which meant that its expansion was not instantaneous.



The force of expansion makes spheres

The force of expansion

- At the time of the Big Bang, an almost infinite amount of quantum forces began to expand from at point of singularity.
- The properties of each quantum force were identical, thus all these forces would have expanded in the same manner, along the same two-dimensional plane.
- However, this expansion required the lateral movement of the quantum forces, which required a force (due to inertia), which is the force of expansion.

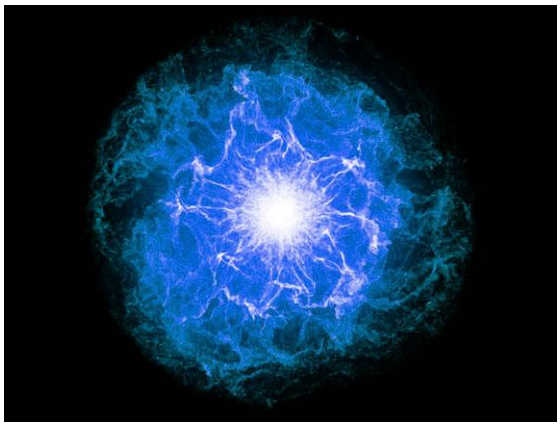


The force of gravity

The force of gravity

- The first point I should make is the fact that the Big Bang was totally silent and it has never stopped, and it continues today.
- The force of expansion is a non-uniform force because the force messages travel at speed (i.e. they are no instantaneous)
- The force of gravity is this 'force of expansion' acting on all planets, but unlike a uniform pressure, this force varies with the square of the distance of separation.

Just a few more points of interest



Expanding universe

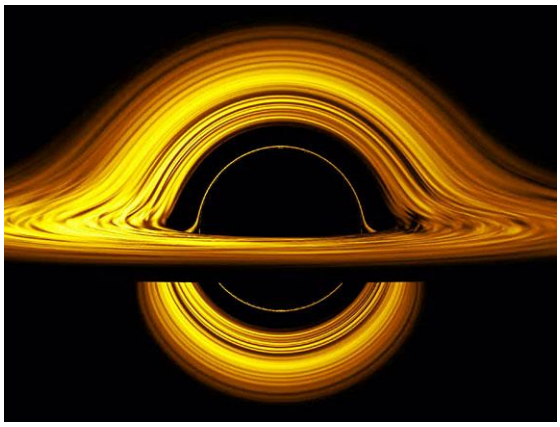
The force of expansion

- **Question:** What would happen if a quantum force did not experience the effects of inertia?
- **Answer:** The expansion of the universe would have been near instantaneous because there would not be anything resisting the acceleration of the expansion.
- However, we know that the speed of expansion was not infinite.

Earth

Matter vs concentrated quantum forces

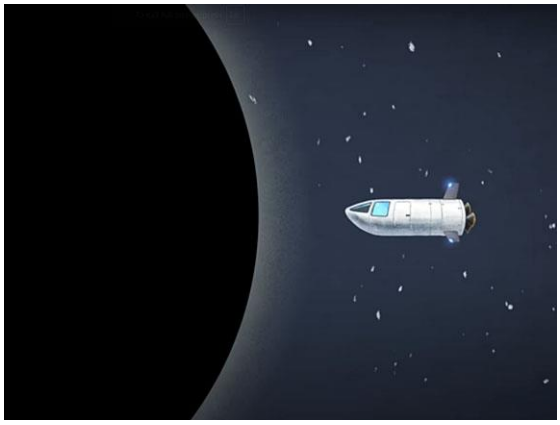
- I have stated that matter consists of a very high concentration of quantum forces.
- However, I should add that matter is surrounded by a concentration of attached quantum forces, which act to make the matter stable, and to try and force free-forming bodies of matter to take the shape of a sphere.
- This concentration of attached quantum forces is significantly less than the concentration required to form matter.



Representation of a black hole

Black holes

- It is likely that black holes are of such a dense concentration of matter, and therefore, quantum forces, that the concentration of attached quantum forces that surround a black hole begins to reach that of physical matter.
- Consequently, a black hole would effectively feed off the surrounding space, slowly (or not so slowly) adsorbing the surrounding attached quantum forces as additional matter, which would prevent the release of light.



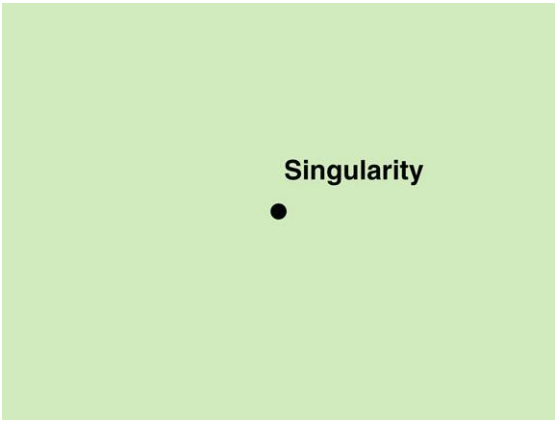
Approaching a black hole

Objects approaching a black hole

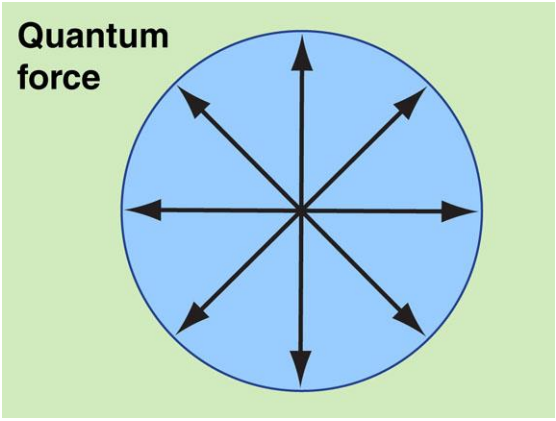
- I do not understand why so many scientists talk about objects entering a black hole, as if a black hole is some type of fluid.
- Approaching objects would crash into a black hole like they were crashing into the hardest and largest diamond they had ever met.
- The last thing passing through the mind of a person hitting at black hole would be their '...s'. ('toes', I meant to say toes)

3. Introducing Quantum Forces

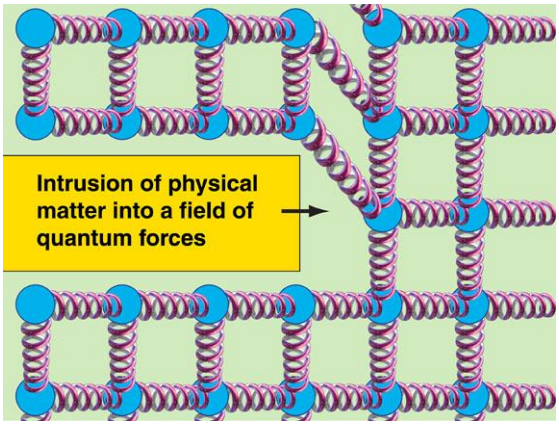
Introduction



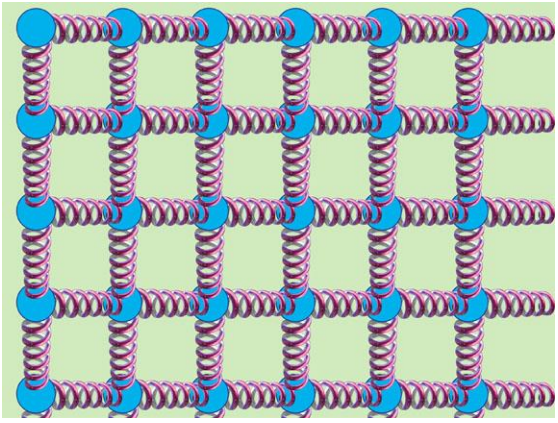
Singularity



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.

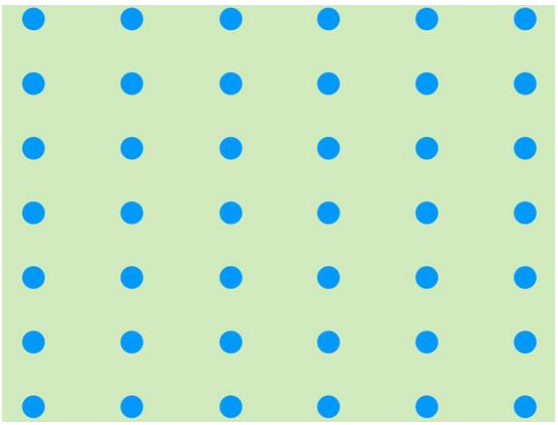
The existence of quantum forces as individual elements

- 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.

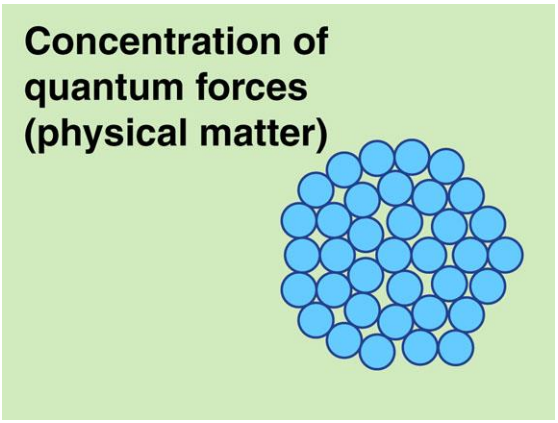
Different forms of quantum forces



Representation of free quantum forces

Free quantum forces

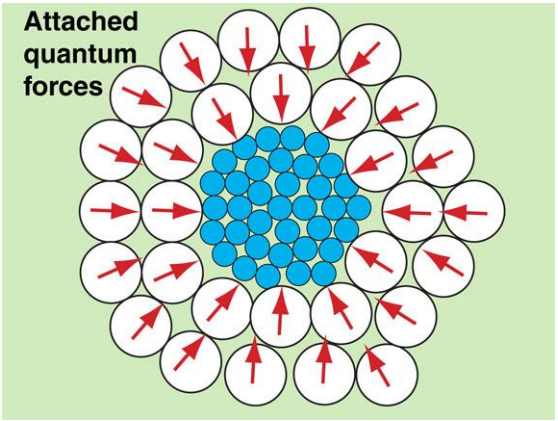
- Free quantum forces are the forces that make up the majority of space.
- The element we call 'aether' is formed from free quantum forces.
- Free quantum forces are mostly stationary, except for the ongoing expansion of the universe.
- Quantum forces also exist within physical matter—some attached to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



Concentration of quantum forces

A concentration of quantum forces

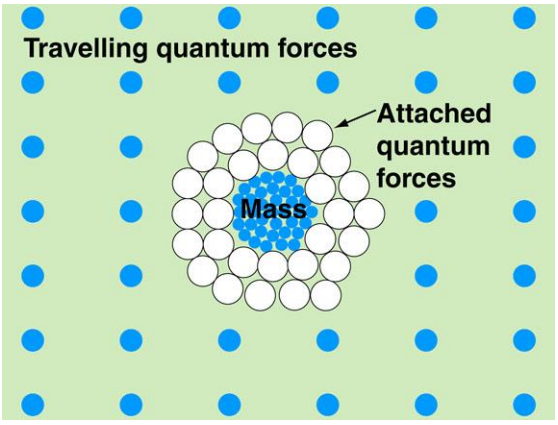
- Free quantum forces can be considered to exist at a background density that reduces as the universe expands.
- Concentrated quantum forces (i.e. matter) exist in a concentration much greater than the background density of free quantum forces.
- Concentrated quantum forces can exist as virtual particles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

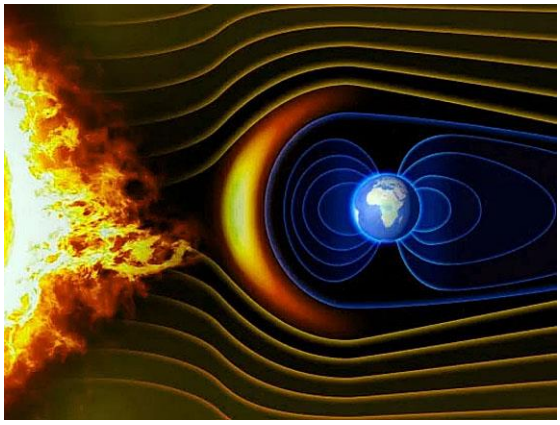
- Even though quantum forces push against physical matter, they are also being pushed by outer forces, which ultimately results in a net attraction force.
- Because of this force, some quantum forces can become firmly (but not permanently) attached to physical matter.
- If the matter moves, then these 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

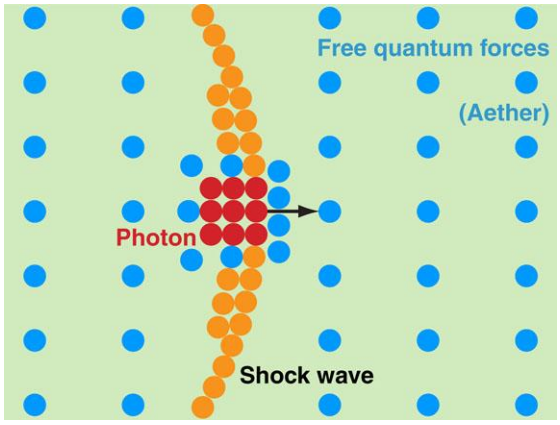
Attached quantum forces

- 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.

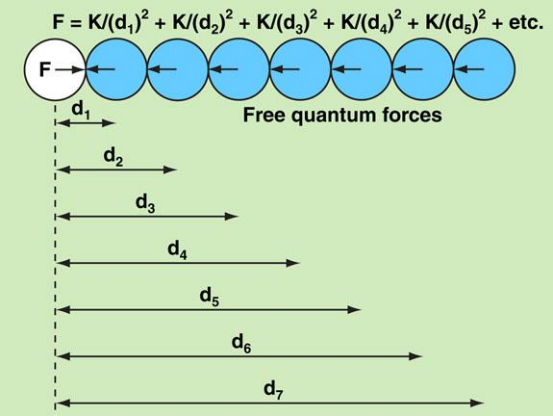


A photon of light

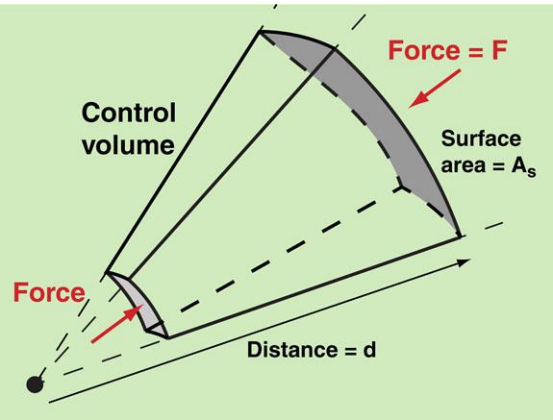
Transient concentrations of quantum forces

- 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.

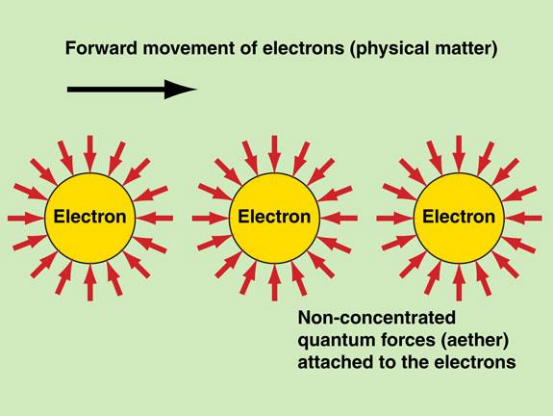
Attached quantum forces



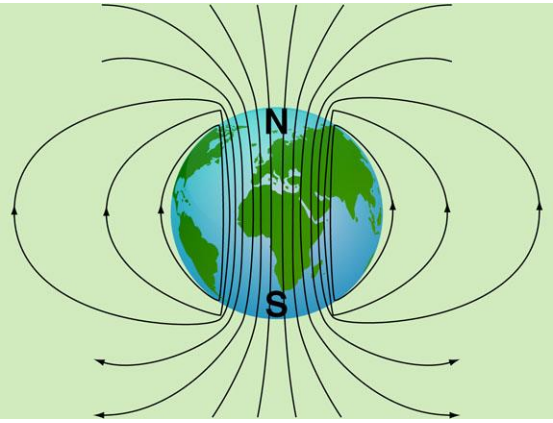
Interaction between quantum forces



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 = $4\pi r^2$).

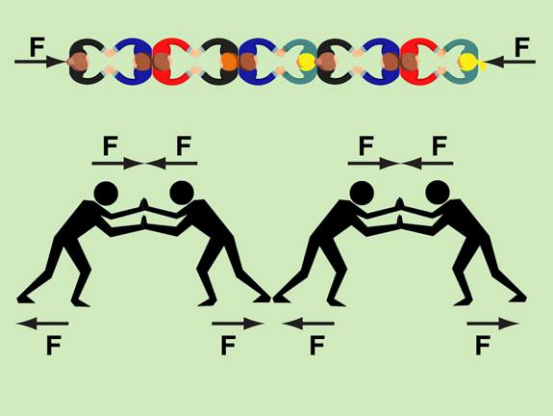
Quantum forces attached to electrons

- 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.

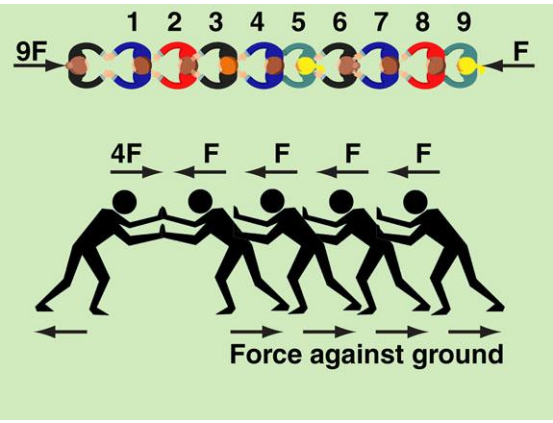
Quantum forces act as point forces, not like pressure



Simulating pressure force

The action of pressure

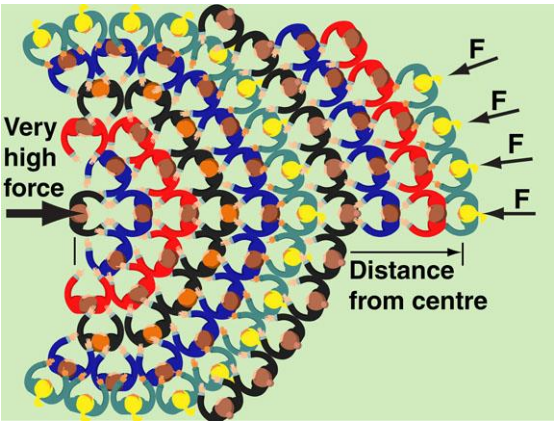
- It would seem logical to think of the forces exerted by quantum forces as acting like a fluid in a pressure container, but quantum forces don't act like pressure, they act like a collection of point forces.
- The following discussion is not perfect, but I hope that it will give you a bit of an idea.
- 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

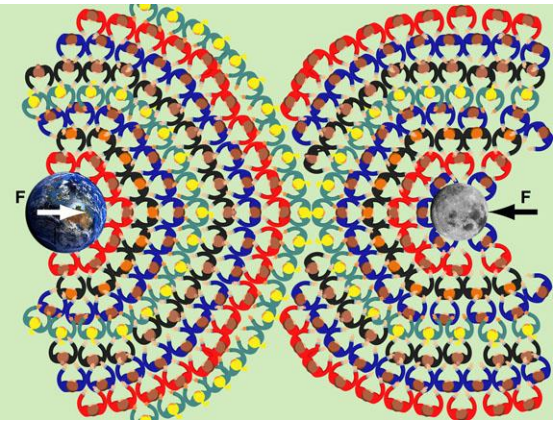
- However, the quantum forces that fill space work in a different way—if a concentration occurs (i.e. matter), then:
  - a concentration of attached quantum forces surrounds the matter
  - they push against each other as well as pushing against the matter
  - as much as they push outwards, they are pushed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

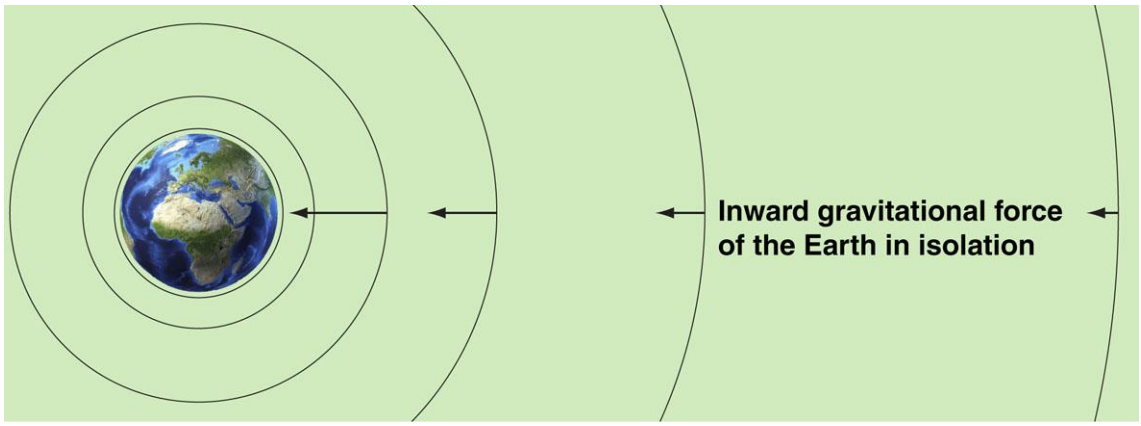


Simulating planetary 'attraction'

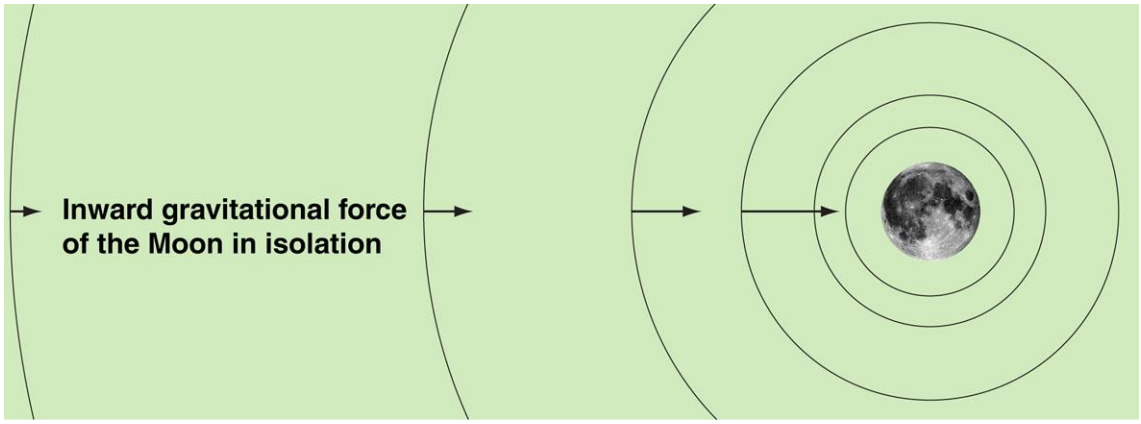
Action of forces on two objects

- 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'.

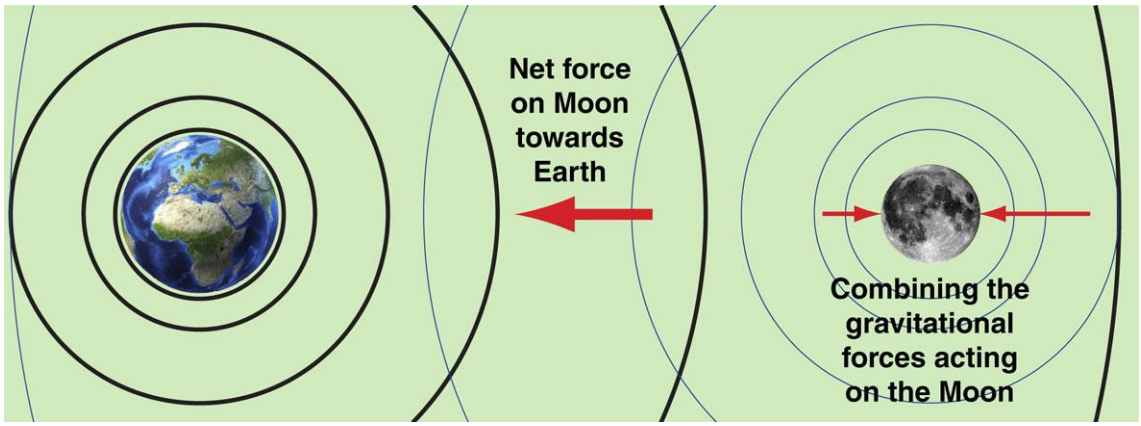
Gravitational forces acting on the Earth and Moon



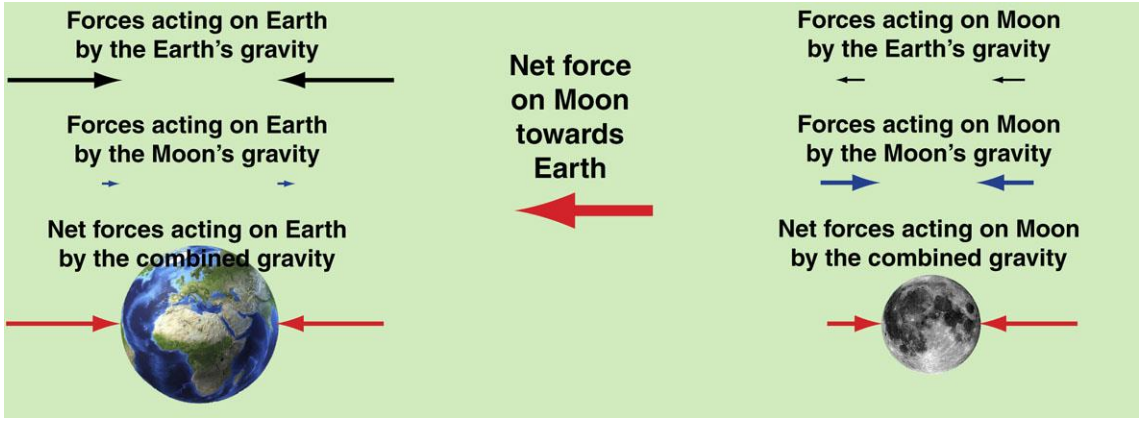
Inward compressing force on the <u>Earth</u>



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

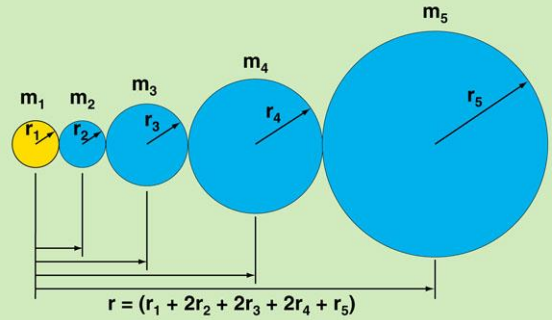


Combined forces acting on the Earth and Moon



Combined gravitational forces acting on the Earth and Moon

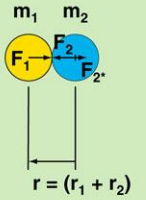
Creating the force of attraction and repulsion



Electron and attached quantum forces

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

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



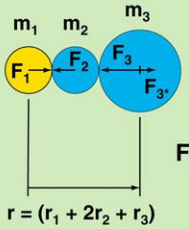
$$F_{2^*} = \sum \frac{(G.m_2.m_n)}{(r_2 + 2r_3 + 2r_4 + 2r_5 \ldots)^2}$$

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

Forces acting on Mass-2

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

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

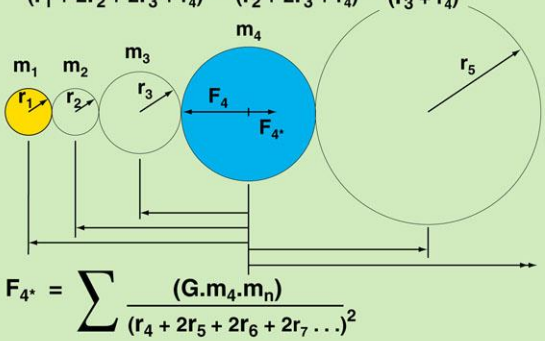


We could assume $m_2 = m_3$

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

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.

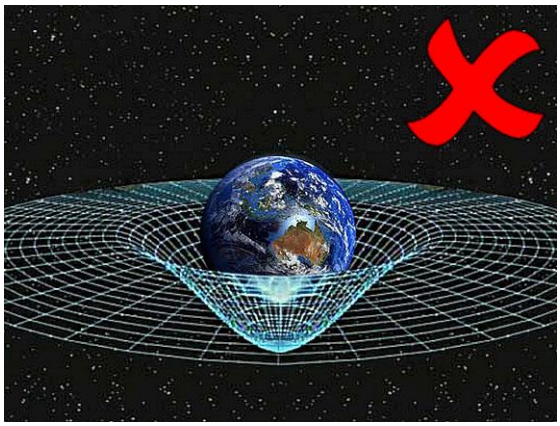
Forces acting on primary mass (m_1) and first secondary mass (m_2)

- 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.

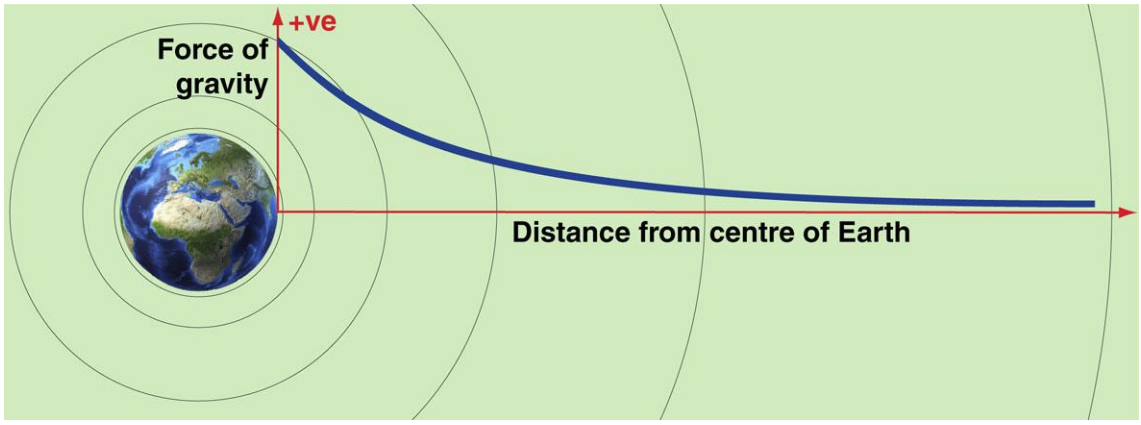
Creating the force of attraction and repulsion



'Spacetime' does not exist

The force of gravity adjacent the Earth

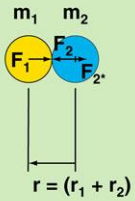
- Sorry Einstein, but gravity is <u>not</u> an action resulting from curved spacetime.
- 'Time' doesn't even exist in reality; it is just a human invention used as a measuring tool.
- Gravity, like everything in the universe, is a product of quantum forces, and the result of how these forces manage to 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

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

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



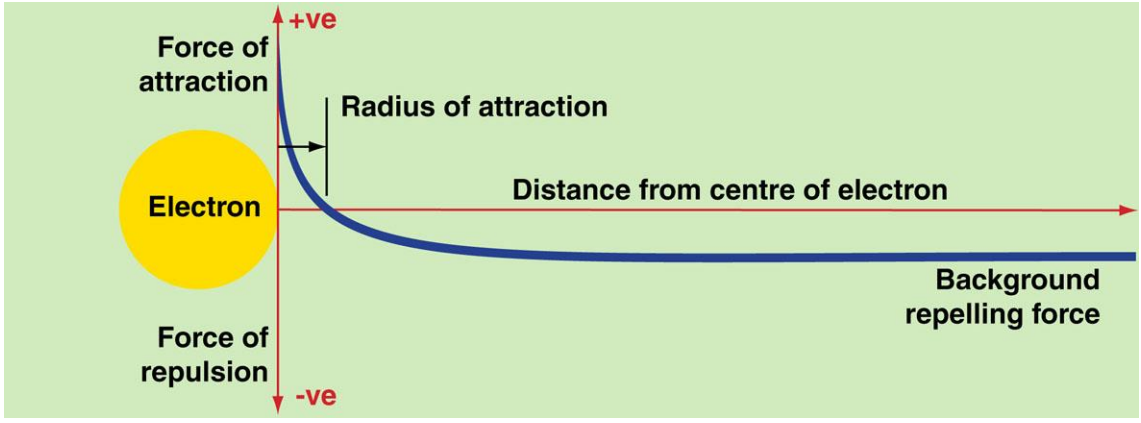
$$F_{2^*} = \sum \frac{(G.m_2.m_n)}{(r_2 + 2r_3 + 2r_4 + 2r_5 \ldots)^2}$$

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!).

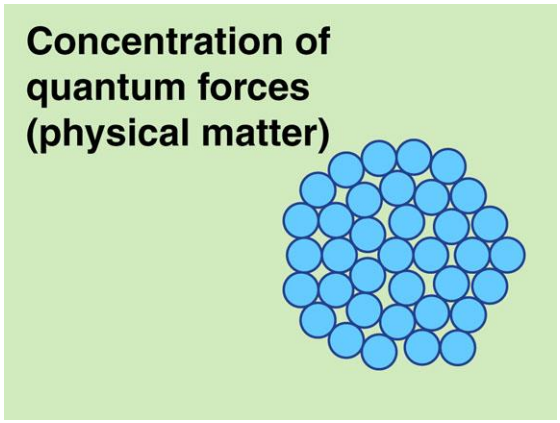


Variation in the force of gravity with distance from an electron

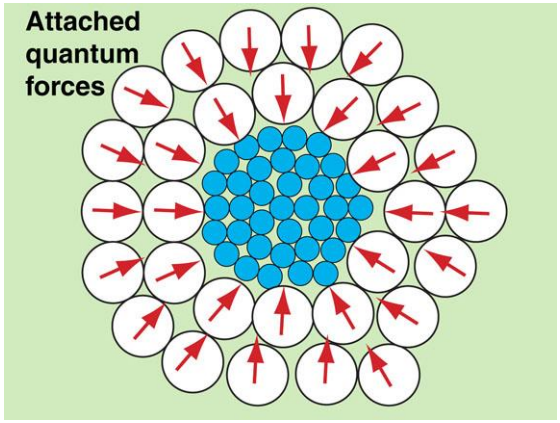
4. Electricity

Introduction

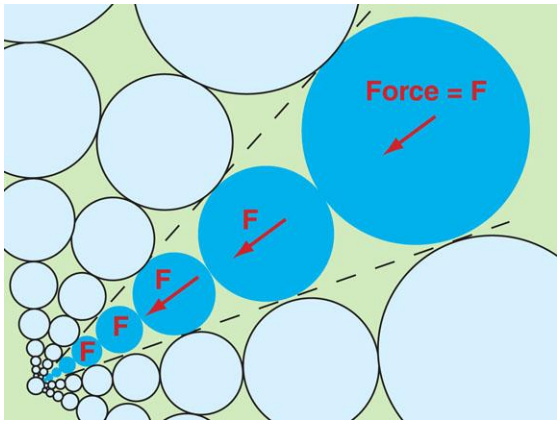
Electrical power lines



Concentration of quantum forces



Quantum forces surrounding matter



Increased <u>concentration</u> of forces

Introduction

- I believe that both electricity and magnetism are products of the movement of quantum forces.
- Electricity is the movement of concentrated quantum forces (electrons).
- Magnetism is the movement of non-concentrated quantum forces (i.e. aether).
- Even though I refer to aether as a form of non-concentrated quantum forces, it exists with the current background concentration.

Quantum forces

- As previously discussed, quantum forces want to repel other quantum forces, which causes a universe filled with quantum forces (i.e. aether), to expand.
- So, you would expect that:
  - a concentration of quantum forces would be unstable, and that
  - free quantum forces would push further away from a concentration of quantum forces than they do from a single quantum force.
- However, what appears to happen (as discussed in the previous chapter), is that a concentration of quantum forces (i.e. matter) becomes surrounded by compressed quantum forces, which I refer to as attached quantum forces.
- Now, this inward movement towards matter is described by Einstein as being the result of curved spacetime.
- Einstein used this explanation because he believed that gravity was not a force.
- And, of course, Einstein may be correct, and curved spacetime may be the correct explanation, but I just don't believe it.

My explanation

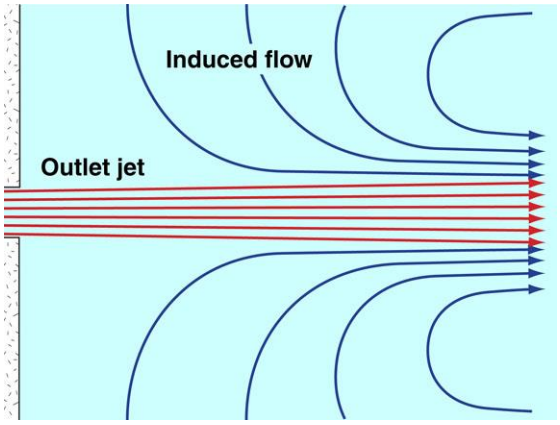
- I believe that as a concentration occurs, it is surrounded by compressed (i.e. concentrated) attached quantum forces.
- Each additional ring of attached quantum forces is further away from the matter, and therefore has less compression, and a reduced inward force, but the total inward force is increased due to the increased surface area of applied forces.
- Consequently, the inner concentration becomes stable, and the force reduces with the square of the distance.

The importance of induced flow systems

Car on a dirt road

Introduction

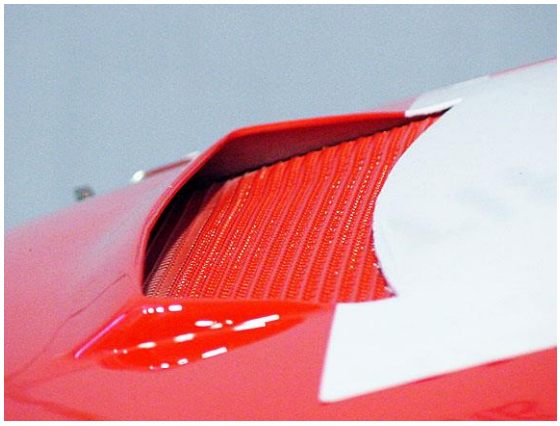
- When it comes to understanding the relationship between electricity and magnetism the key is to understand that:
  - much of the relationship is based on the mechanics of induced flow, and
  - electricity moves more like traffic flow than water flow, and
  - magnetism moves like a fluid, and its properties relate to fluid mechanics.
- If electricity was a car on a dirt road, then magnetism would be the dust cloud.



Induced water flow

Induced water flow

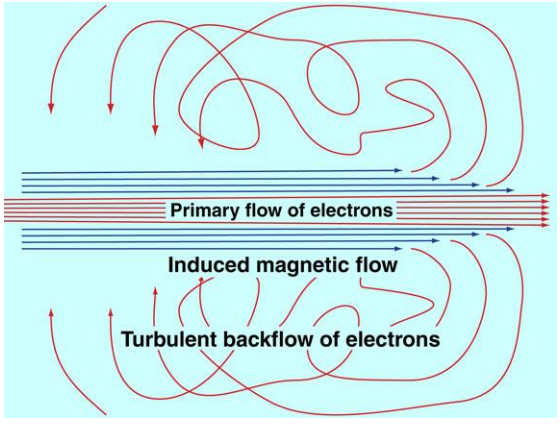
- In hydraulics, induced flow normally occurs when a jet of high-velocity water enters a region of still, or low-velocity water.
- Induced flow is utilised in a variety of hydraulic installations, as well as household tools, including:
  - garden and lawn chemical spray systems
  - water supply chlorination systems.



Radiator cooling vent on a rally car

Induced air flow

- In aerodynamics, induced air flow is used in engine carburettors, and air venting.
- The image shown left is the outlet vent for the radiator cooling system on a Peugeot rally car—air passing over the hood is allowed to pass at speed over the forward lip, which induces air flow from the radiator venting system.
- Induced air flow vents are also used to remove high-pressure air from under the car, and extract air from the cabin.

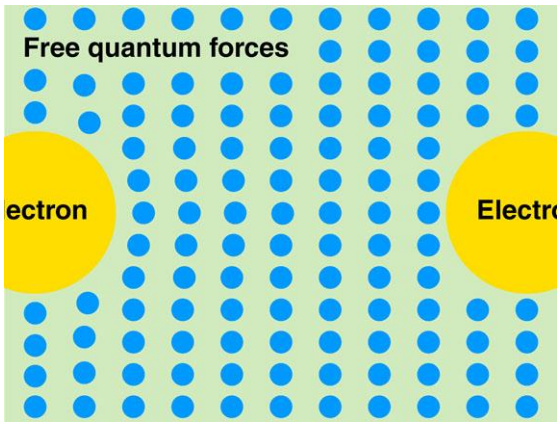


Induced magnetic flow

Induced magnetic flow

- In electromagnetism, the flow of electrons causes the direct movement of quantum forces attached to the electrons.
- The movement of these attached quantum forces induces the flow of adjacent free (travelling) quantum forces, which forms part of the magnetic flow.
- Even though the attraction radius of an electron is very, very small, once one layer of quantum forces moves, this action induces the flow of surrounding quantum forces.

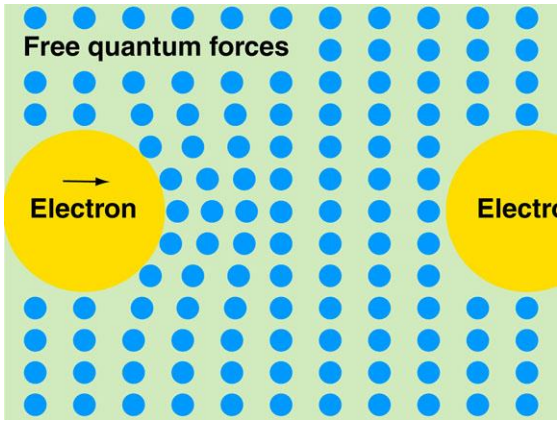
Electrons moving quantum forces moving electrons



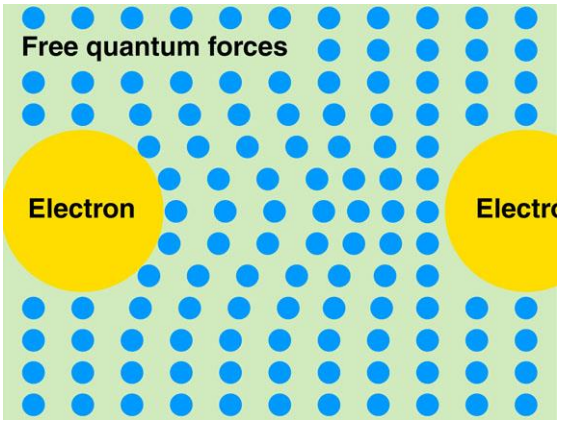
Stage 1

Movement induced by other movement

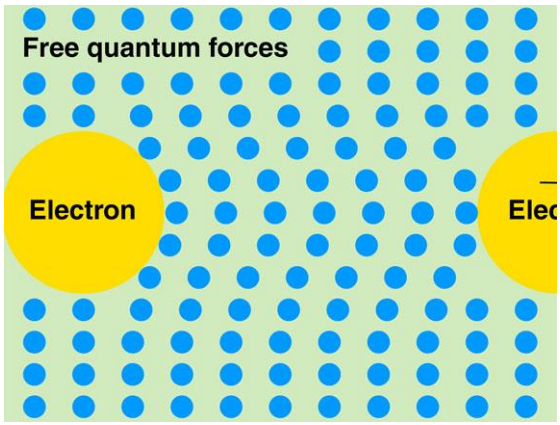
- When an electron moves, it will cause the direct movement of its attached quantum forces, which in-turn will induce movement in the surrounding free quantum forces.
- The force message of this movement will flow through a field of forces at the speed of causality.
- These diagrams show how the movement of one electron can create compression waves in the aether, which can cause the movement of other electrons.



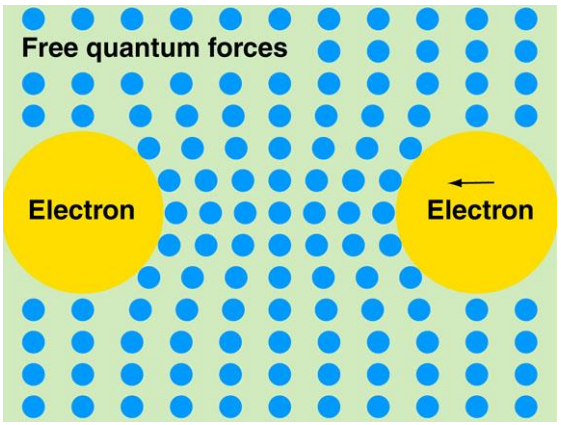
Stage 2 (movement to the right)



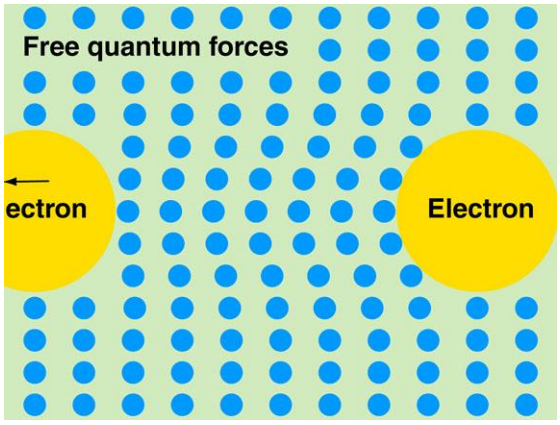
Stage 3 (movement to the right)



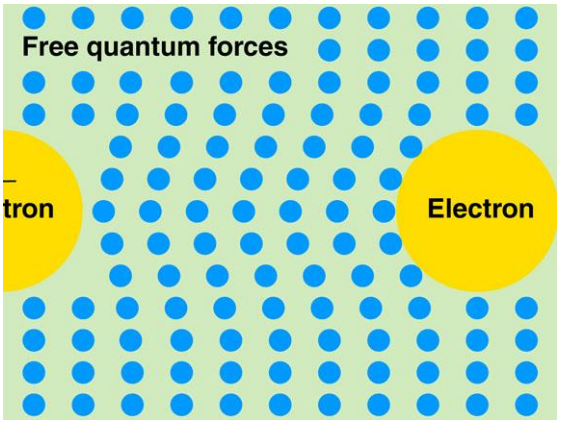
Stage 4 (movement to the right)



Stage 5 (movement to the left)

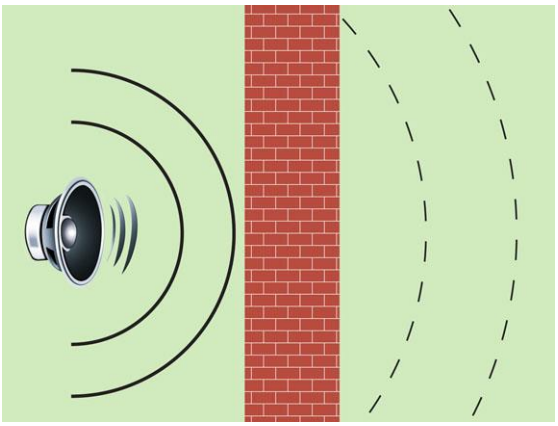


Stage 6 (movement to the left)



Stage 7 (movement to the left)

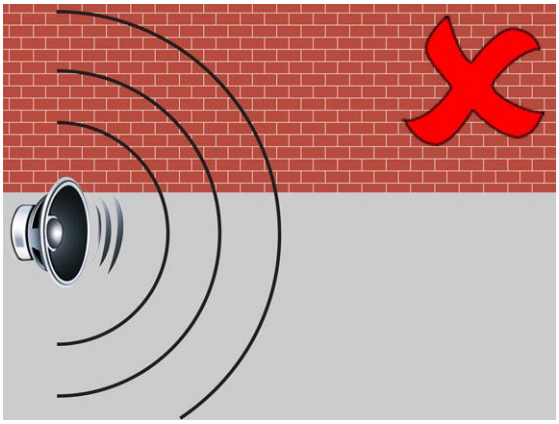
The mechanics of sound passing through walls



Sound passing through a wall

Introduction

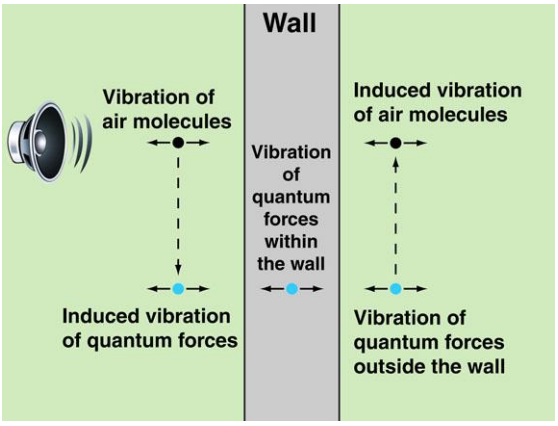
- If I asked you to tell me how sound passes through solid walls, what would you say?
- Would you tell me that your voice vibrates the air molecules, which moves as a compression wave at the speed of sound towards the concrete wall, which causes the wall to vibrate at almost the same frequency, which causes the air molecules on the other side of the wall to vibrate, which then moves onto somebody's ear or noise detection system?



Sound waves struggle to vibrate a wall

Do air molecules really vibrate solid walls?

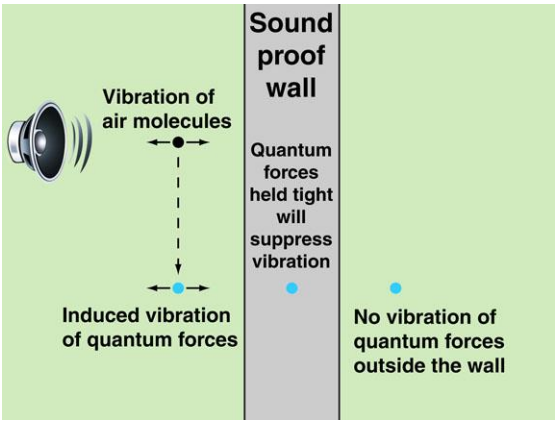
- Now try these questions:
  - If air molecules can vibrate a solid concrete wall, then how can a relatively thin sheet of sound-proofing material, or a sheet of cork, suppress the noise?
  - If the air molecules really do vibrate a concrete wall, then why does the bracing of the wall not change the frequency of the passing sound, and why is it that you can recognise the voice of the person on the other side of the wall?



Sound vibration passing through a wall

Sound passing through walls

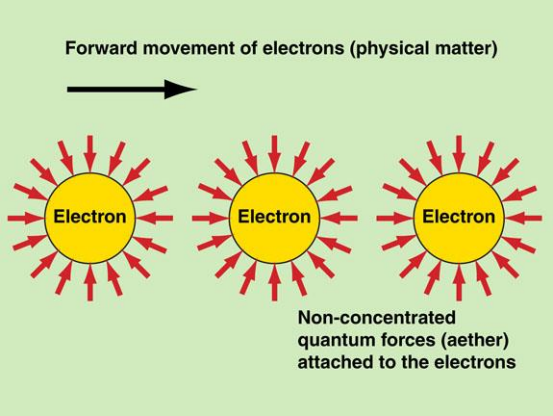
- Sound generates a compression wave of air, which will induces a similar compression wave within the attached quantum forces.
- When sound waves hit a wall, the vibrating quantum forces will transfer their vibration to free (travelling) quantum forces in the wall, which ultimately pass this energy through to the quantum forces attached to air molecules on the opposite side of the wall,



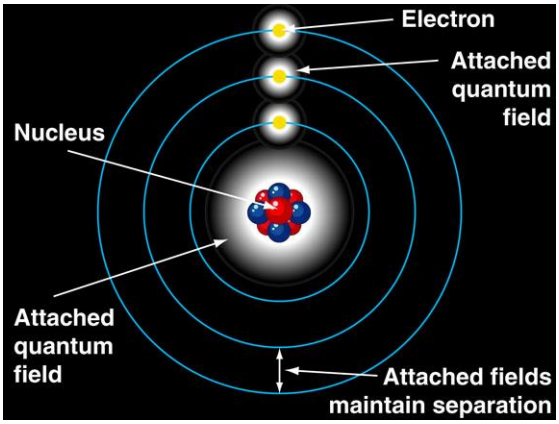
Sound not passing through a wall

The mechanics of sound-proofing materials

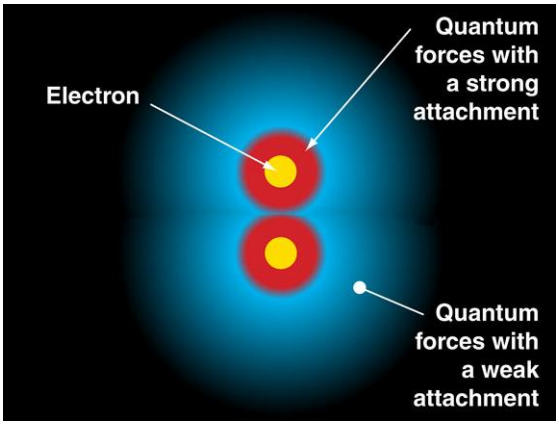
- Sound-proofing materials may not be as 'solid' as a concrete wall, or any where as thick as a concrete wall; however, the key to their sound-proofing properties is the way the quantum forces are so firmly attached to the atoms within the material.
- While insulation materials may stop the flow of electrons, sound-proofing materials stop the movement (vibration) of attached quantum forces.



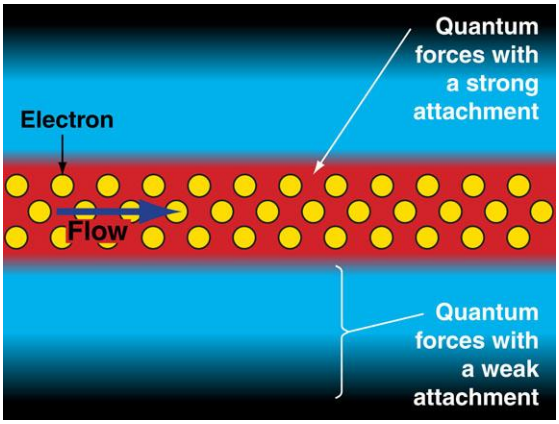
Quantum forces attached to electrons



Atom



Tightly packed electrons



The flow of electrons and magnetic field

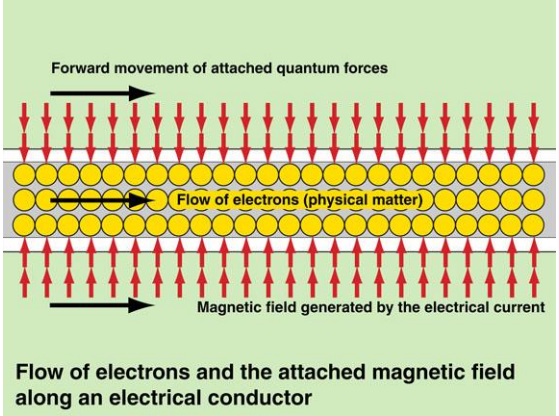
Electricity

- As we know, electricity is generated by the flow of electrons, but this is not the only way that electricity can be generated.
- It is suggested that 'light' travels as electromagnetic radiation, which involves electricity, but 'light' is not formed from electrons.
- I put it to you that 'electricity' is actually generated by the movement of any form of matter; it is just that the electricity is only strong enough for us to detect when the matter moves as fast as an electron.

Attached quantum forces

- Electrons are one of the smallest, if not the smallest, forms of matter, and each electron travels with its own 'shield' of attached quantum forces.
- So, why don't these quantum forces cause electrons to merge together to form a larger concentration, in the same way that celestial bodies gravitate towards each other?
- **Answer:** It all comes down to the relative size of the electron compared to its immediately-attached quantum force. It is the small size of the electron that dramatically changes the mathematics and causes a net attraction forces to quickly change into a net repulsion force.
- It is my belief that if a photon of light were to be broken up by a very fine filter, then the fractured segments would become unstable and the light would dissipate into free quantum forces.
- It would appear that an electron, which is a larger concentration of compressed quantum forces than a photon, is large enough to be stable, but too small to cause a wide-reaching attraction force that would cause electrons to join.
- This would suggest that the reason electrons can only exist at specific radii within an atom is because these attached quantum forces cause a specific separation of each orbit.
- However, the attached quantum forces are only those that are so firmly attached to the electron that they cannot be 'brushed' aside, unlike the larger ring of attached quantum forces that form the greater magnetic field.

Electricity in wires

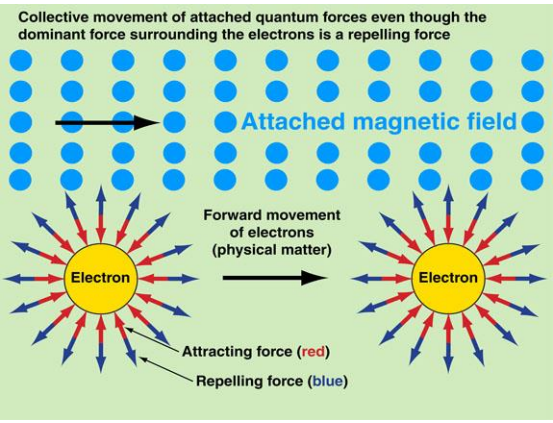


Flow of electrons and the attached magnetic field along an electrical conductor

Quantum forces attached to electricity

Movement of <u>attached</u> quantum forces

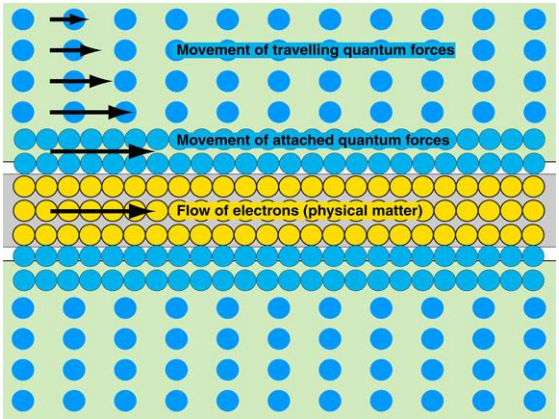
- When electrons move along an electrical wire, the attached quantum forces move with the electrons, both inside and outside of the wire, even if it is insulated.
- The region of influence of a quantum force is significantly smaller than an electron.
- Thus quantum forces, both 'free' and 'attached', will exist throughout all matter, including the insulation material of the electrical wiring.



Electrons moving the magnetic field

Movement of quantum forces

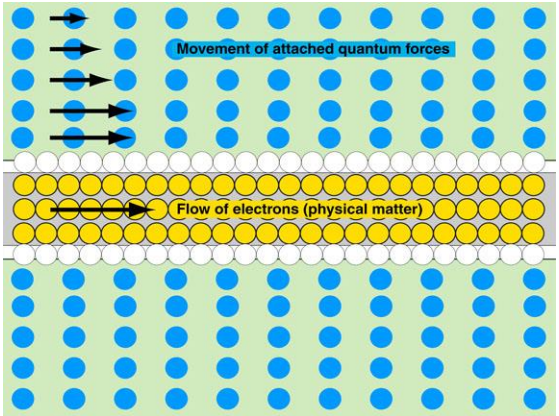
- Because a repelling force exists between all electrons, if one electron is forced to move along a wire, then all electrons in that chain will want to move.
- And importantly, even though the electrons are repelling the quantum forces that make-up the magnetic field, these quantum forces remain attached to the wire, AND it does not matter if the common force is attracting or repelling, if one quantum force is forced to move, then all quantum forces will want to move.



Quantum forces now shown in 'blue'

Movement of quantum forces

- The movement of electrons in a non-insulated wire causes the direct movement of its attached quantum forces, which induces movement within the surrounding free (travelling) quantum forces.
- It is the movement of these travelling quantum forces that creates the attached magnetic field.



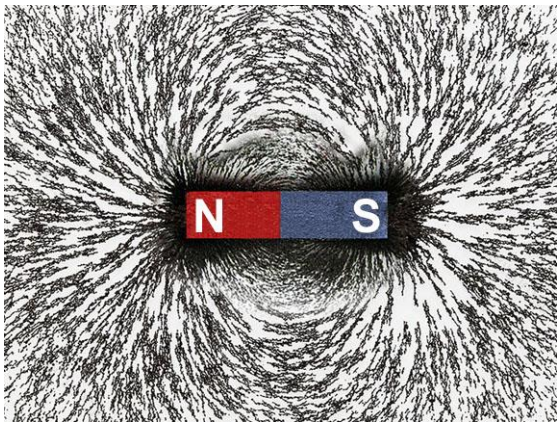
The effects of an insulated wire

<u>Insulated</u> wires

- When an electrical wire is insulated, the electrons within the insulation material are resistant to movement, which means their attached quantum forces will also resist any movement.
- Even though the attached quantum forces within the insulation will resist movement, there are still quantum forces attached the wire that exist outside the insulation (which makes-up the weak magnetic field), that will be forced to move.

5. Magnetism

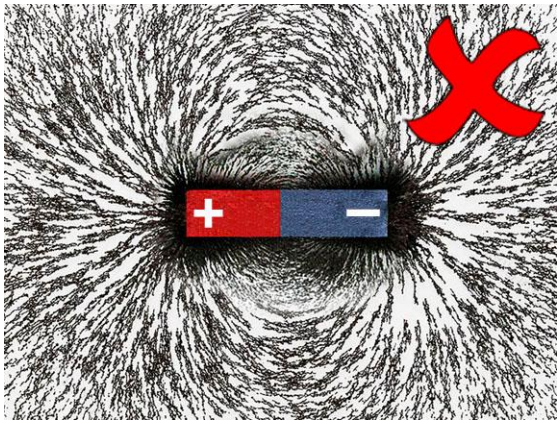
Introduction



Magnetism

Introduction

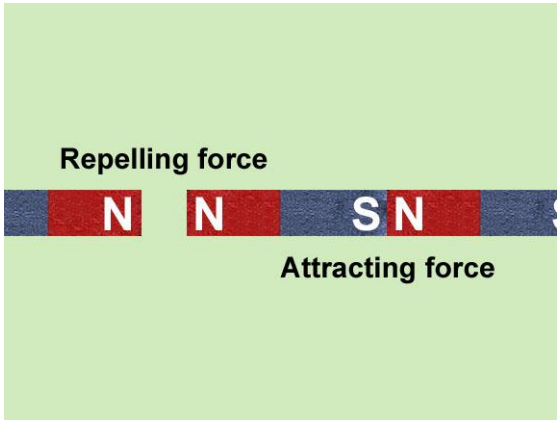
- Most of astrophysics can be understood with just an understanding of high school physics, and a really good teacher.
- In this document I hope to use high school physics to explain:
  - what causes magnetism
  - what allows electricity to generate electromagnetism
  - what created Earth's magnetic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



No positive or negative effects

No more positive and negative charges

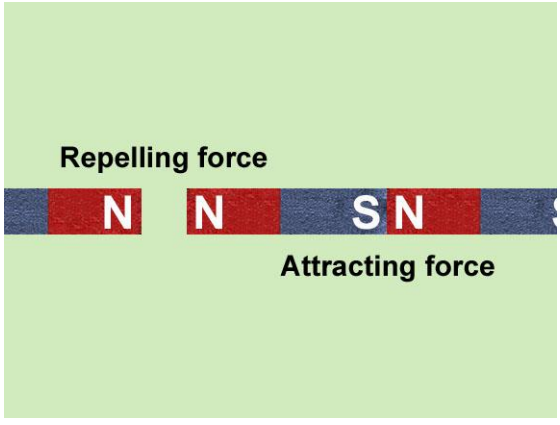
- In order to correctly discuss magnetism, we first need to remove all mention of positive (+) and negative (-) charges.
- Surprise, surprise, 'magnetism' has **nothing** to do with charged particles.
- The concept of charged particles was **invented** as a means of describing the force that holds electrons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

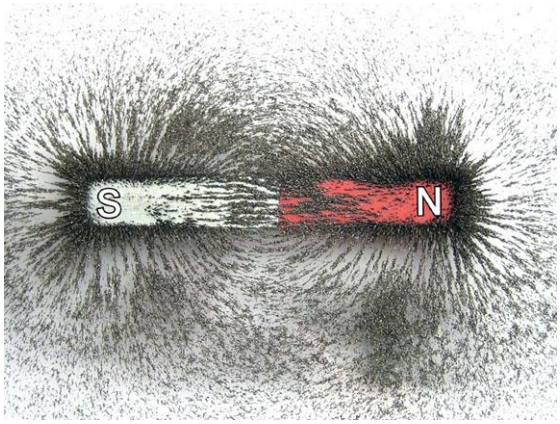


Assumed magnetic forces

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.

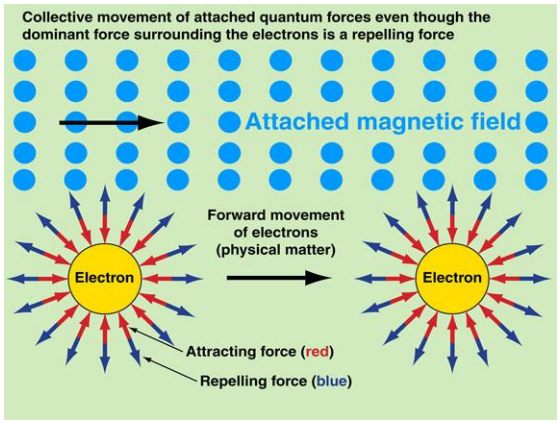
Magnetism and quantum forces



Bar magnet

Magnetism

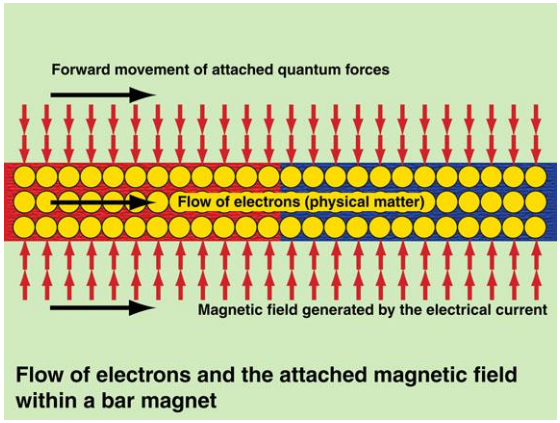
- The quantum force model suggests that magnetism is generated by the movement of non-concentrated quantum forces.
- In effect, what flows in a magnetic field is concentrated aether, the same thing that makes-up the majority of space.
- If we accept that quantum forces display the properties of mass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

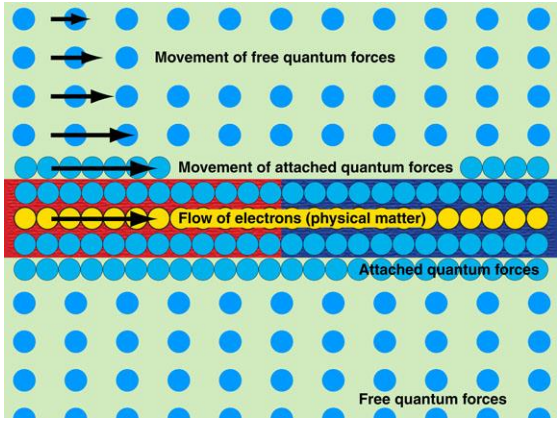


Flow of electrons and the attached magnetic field within a bar magnet

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.

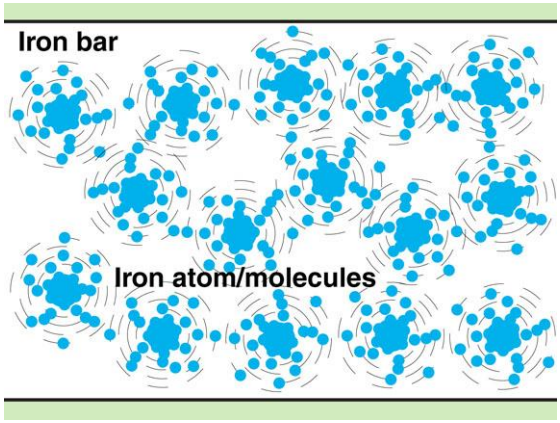


Quantum forces now shown in 'blue'

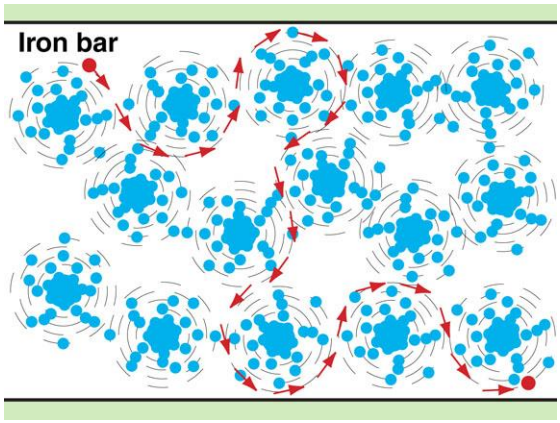
Movement of travelling quantum forces

- 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.

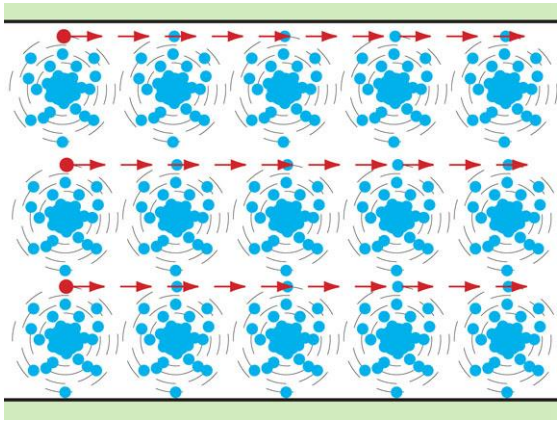
The mechanics inside a bar magnet



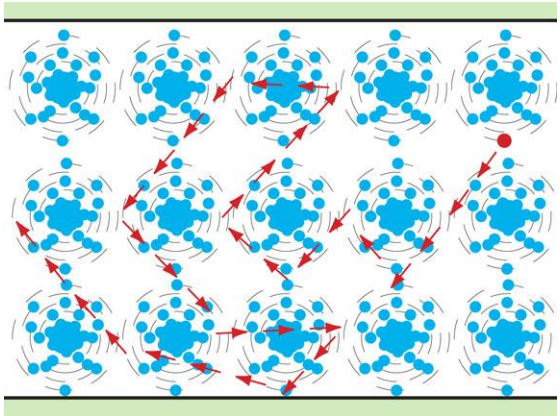
Random iron atoms in an iron bar



Random movement of an electron



The forward movement of electrons



The return movement of electrons

Introduction

- The key to understanding the movement of quantum forces, is to understand the interaction between:
  - physical matter and attached quantum forces
  - two independent fields of quantum forces moving parallel to each other, and
  - two independent fields of quantum forces moving perpendicular to each other.

The movement of free electrons

- In some materials, high-energy electrons held in the outer most shell of the atom can jump freely from atom to atom.
- These electrons, like all matter, will travel with attached quantum forces.
- As the electrons move, the corresponding movement of the attached quantum forces will cause movement of the free quantum forces; but, if this movement is random, then there is no net movement of quantum forces.

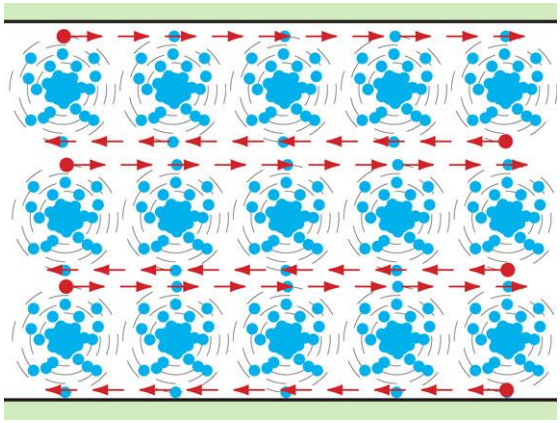
The movement of electrons in a given direction

- Atoms in a magnetic material can be realigned such that the flow of electrons in one particular direction is well organised.
- The energy for the process comes from the momentum of the electrons, but what initiates the magnetic process is the movement of the quantum forces that are attached to the electrons.

The return movement of electrons

- In these magnetic materials, the realignment of the atoms generates a ‘straight forward’ movement of electrons in one direction, but the return journey for the electrons is complex and random.
- Attached quantum forces will travel with the electrons in both directions, but in one direction the flow of quantum forces is well organised (this is the driver of a magnetic field), while in the other direction the random movement generates no net movement of quantum forces.

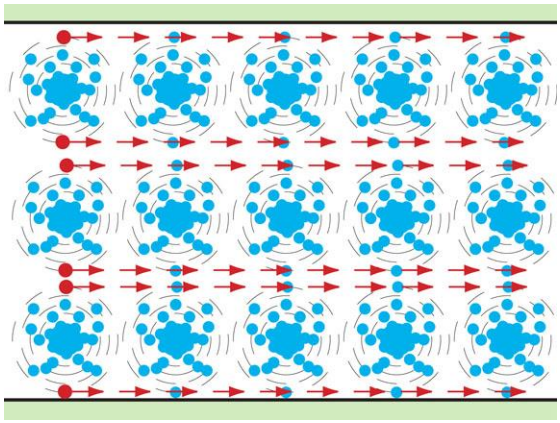
Different types of electron movement



Good electrical conductor

Case 1

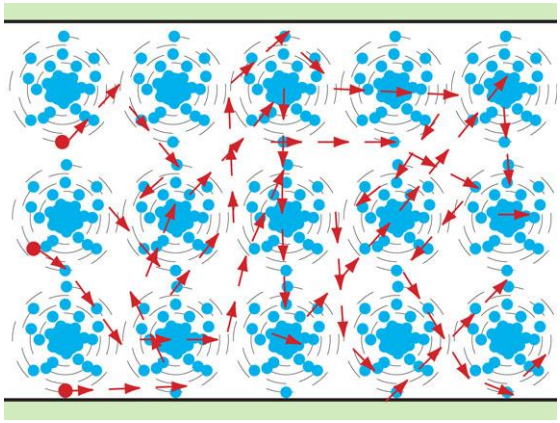
- In such a material the movement of attached quantum forces in one direction is cancelled by the movement of attached quantum forces in the opposite direction.
- Such a material cannot be magnetised even though it may be a good conductor of electricity.
- This diagrams shows a conductor metal while it is not conducting electricity.



Good electrical conductor

Case 2

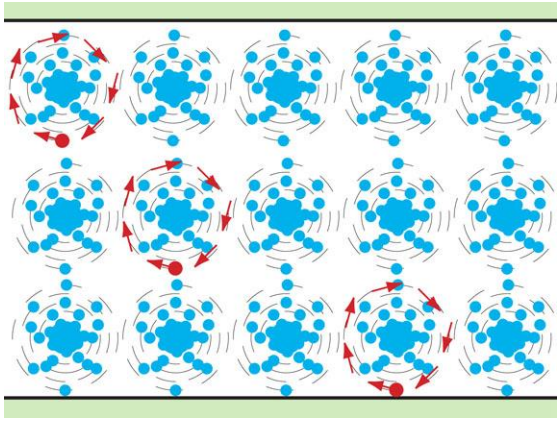
- This diagrams shows a conductor metal while it is conducting electricity.



Non-conductor, non-magnetic

Case 3

- The material shown here would be non-magnetic, and a poor conductor of electricity.



Non-conductor, non-magnetic

Case 4

- The material shown here would also be non-magnetic, and a poor conductor of electricity.
- At this stage I am not concerned that atoms behave this way because they have two orbitals, or don't have two orbitals, or if they have a free electron, or don't have a free electron; for whatever the reason is, the atoms are allowing such electron movement to occur.

Comparing magnetic flow with alpine skiing (I hope this makes sense)

Innsbruck winter Olympics

The ski jump (super conductors)

- A strong, non-metallic conductor, such a copper, can be compared to a ski jump.
- The movement of skiers (attached quantum forces) up the slope is straight forward and efficient.
- However, the movement down the slope is also straight forward and efficient.
- This results in the spectators (free quantum forces) remaining in a fixed position, neither moving up or down the slope.

Ski lift

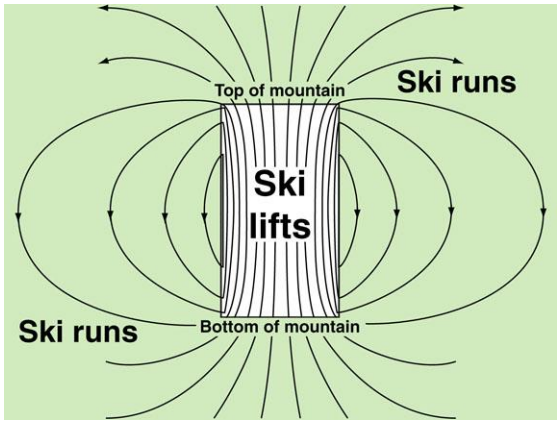
The ski lift (permanent magnet)

- Magnetising ferromagnetic materials formalises the internal travel path of electrons (skiers) towards the negative end (mountain top) of a permanent magnet.
- Attached quantum forces (ski instructors) induce the flow of free quantum forces (skiers) to the top of the mountain.
- The movement of both attached and free quantum forces up an adverse gradient is powered by the movement of electrons.

Skiing

Downhill skiing (free quantum forces)

- Free quantum forces (skiers) are not encouraged to travel a direct route back towards the positive end of the magnet (bottom of the slope).
- Instead, free quantum forces (skiers) are encouraged to take an indirect path back to the positive end of the magnet (i.e. movement outside the magnet), but they are encouraged to follow regular pathways (ski runs) back to the north or positive end of the magnet.

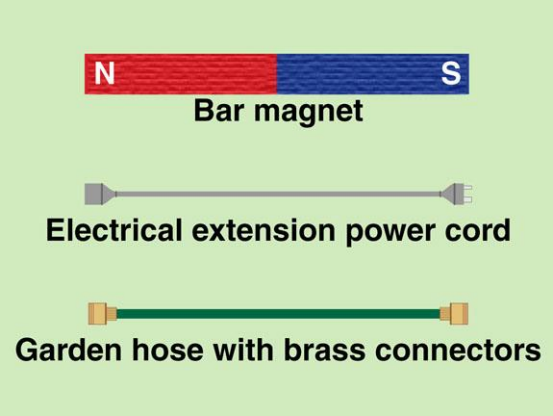


Travel path of skiers

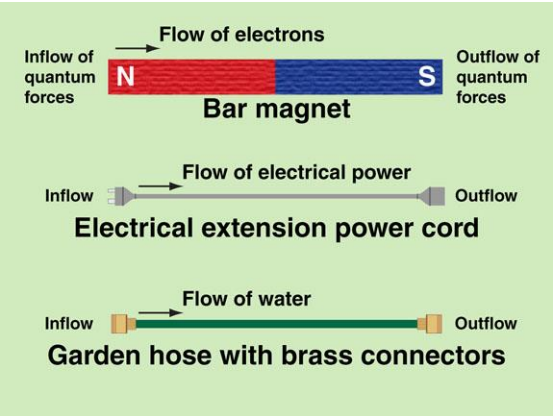
Ski trails (movement outside a magnet)

- Free quantum forces move in a continuous loop through the magnet, then outside the magnet.
- Skiers are powered up the adverse gradient (moving from north to south inside the magnet) by the movement of electrons (ski lift).
- Skiers are released at the top of the mountain (south or negative end) where they are free to ramble down the slope (outside the magnet), before starting the loop all over again—fun, but with a cost.

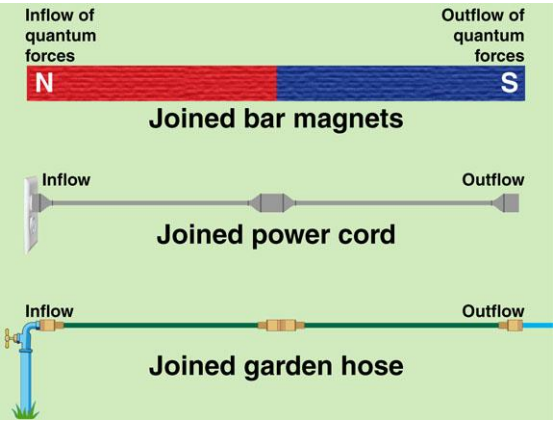
Joining magnets



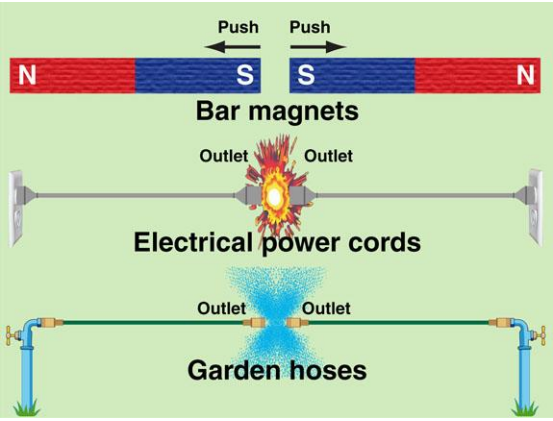
Bar magnet, power cord and garden hose



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.

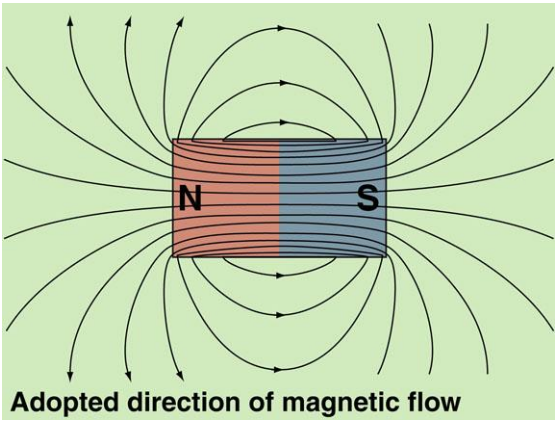
Joining two magnets

- 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.

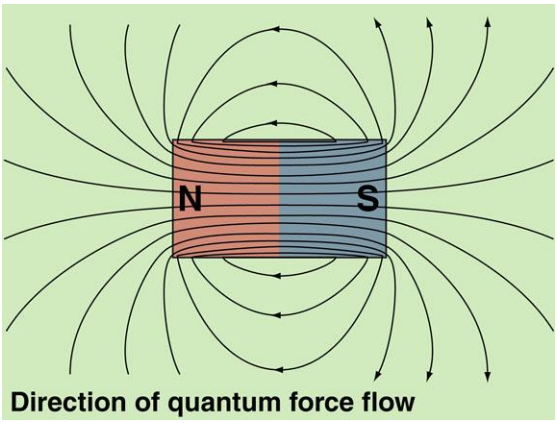
The mechanics of a magnet's repelling force



Direction of +ve flow by convention

Direction of current based on the movement of a positive ion

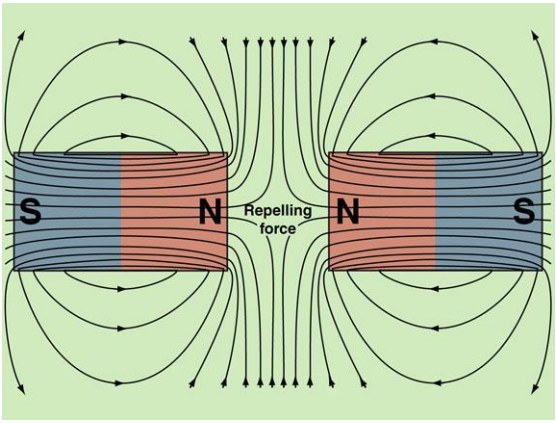
- Technically it is incorrect to say that the magnetic flow is from the north to south end, or vice versa, because the magnetic flow is a closed circuit, which means quantum forces travel from the north to the south, and from the south to the north.
- But at some stages the flow is insides the magnet,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

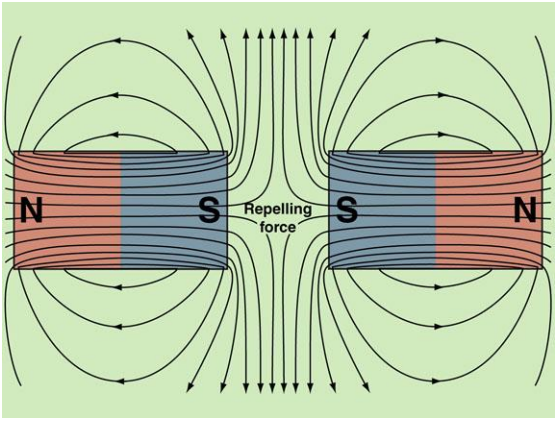
- The actual external flow of quantum forces is from south to north, or from the negative end to the positive end.
- The actual internal flow of quantum forces is from north to south, or from the positive end to the negative end.



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.

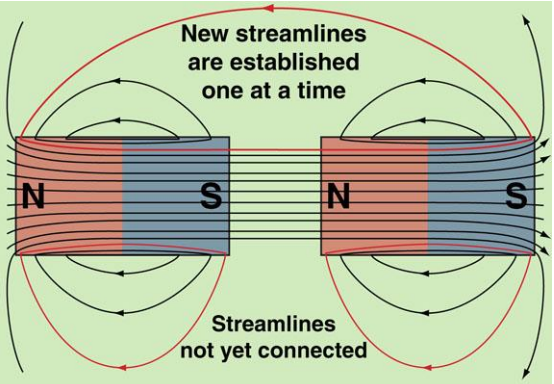


Two adjacent southern (negative) ends

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.

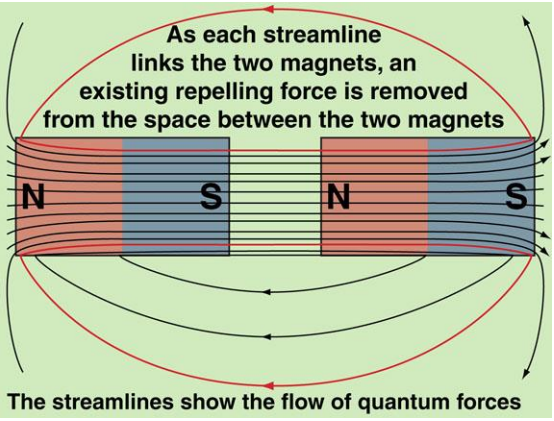
The mechanics of a magnet's apparent 'attracting' force



Actual quantum force flow

Shifting of the magnetic streamlines

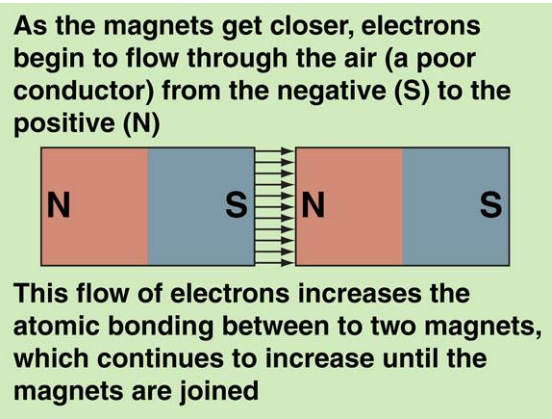
- Joining the north end to the south end allows new 'links' to form, and causes an attraction force.
- It has nothing to do with positive (+ve) and negative (-ve) attraction.



Actual quantum force flow

Removal of repelling forces from between the magnets

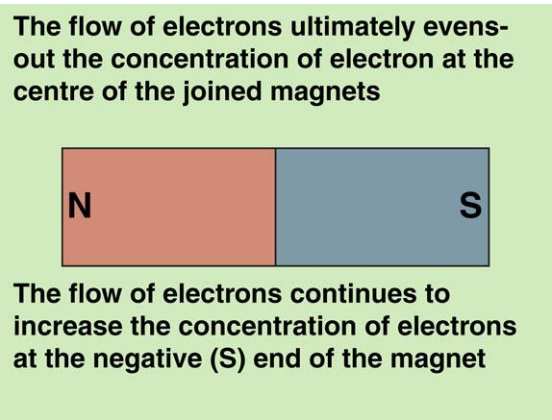
- Removing two magnets from each other requires energy in order to break the magnetic connections.



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.

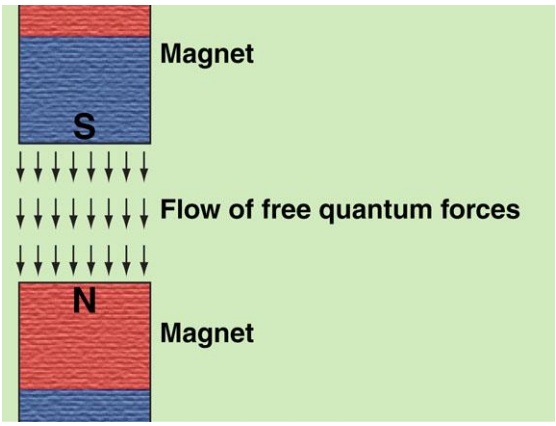


Joined magnet

Growth of atomic bonds

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

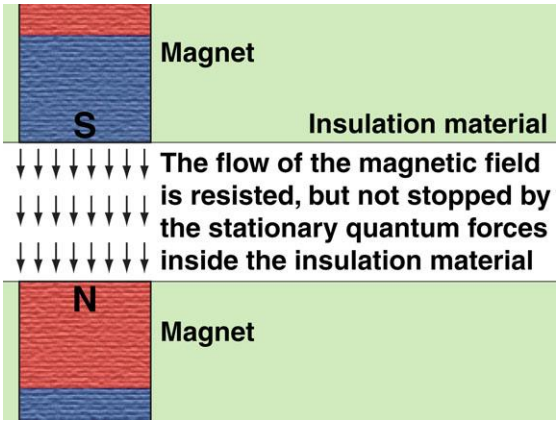
The mechanics of magnetic flow through insulation material



Electrical flow in an insulated conductor

Insulated electrical wires

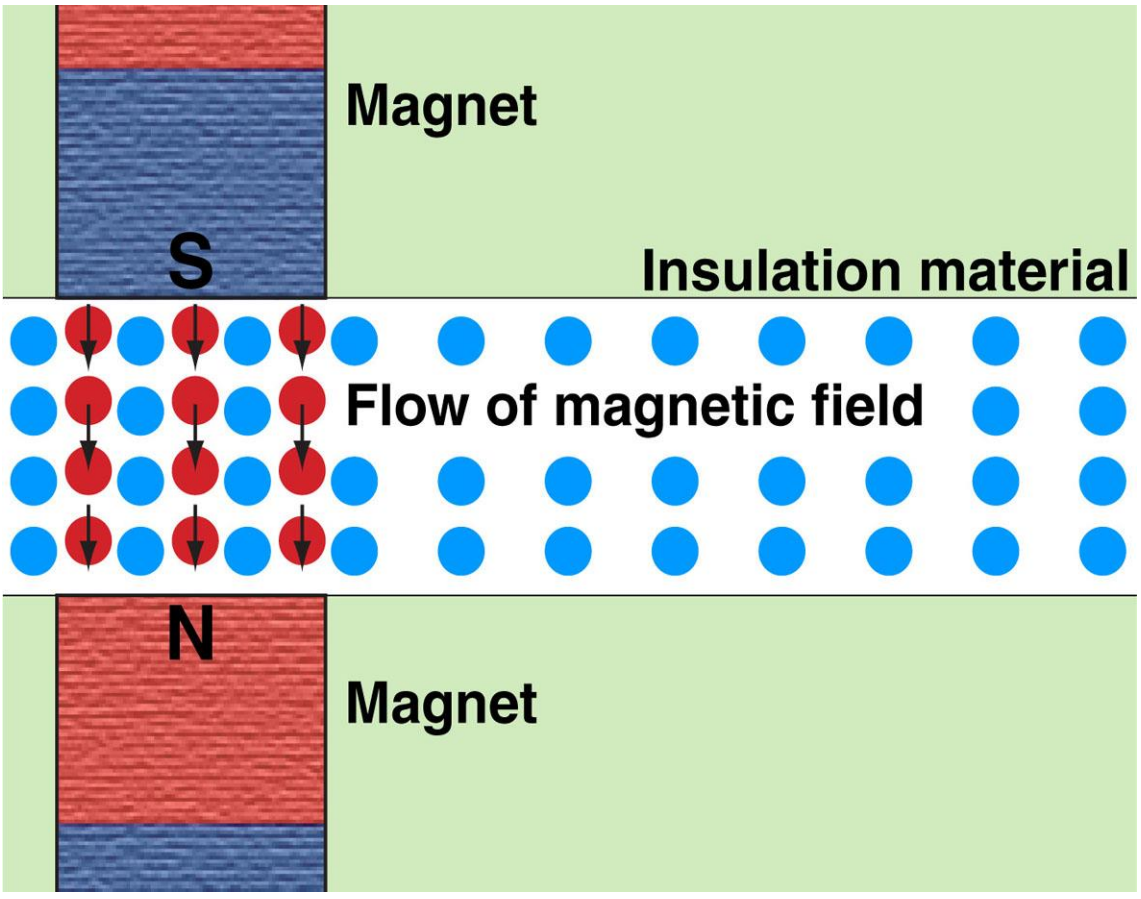
- When an electrical wire is insulated, the electrons within the insulation material are resistant to any form of movement, which means their attached quantum forces will also resistant to any form of movement.
- Even though insulation material will contain free quantum forces, these forces will not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

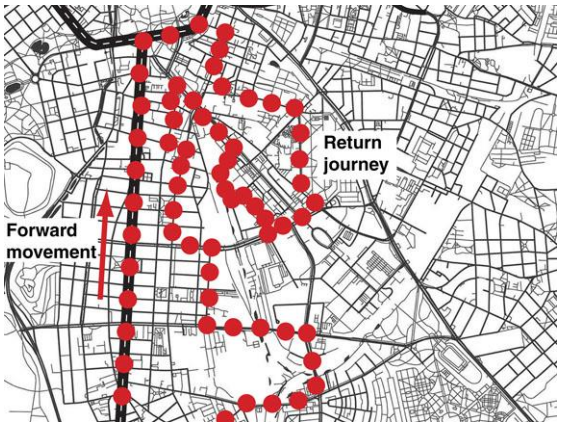
Magnetic flow through insulation

- 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

A traffic-based analogy of magnetism



Traffic flow through a city

Concentrated traffic flow

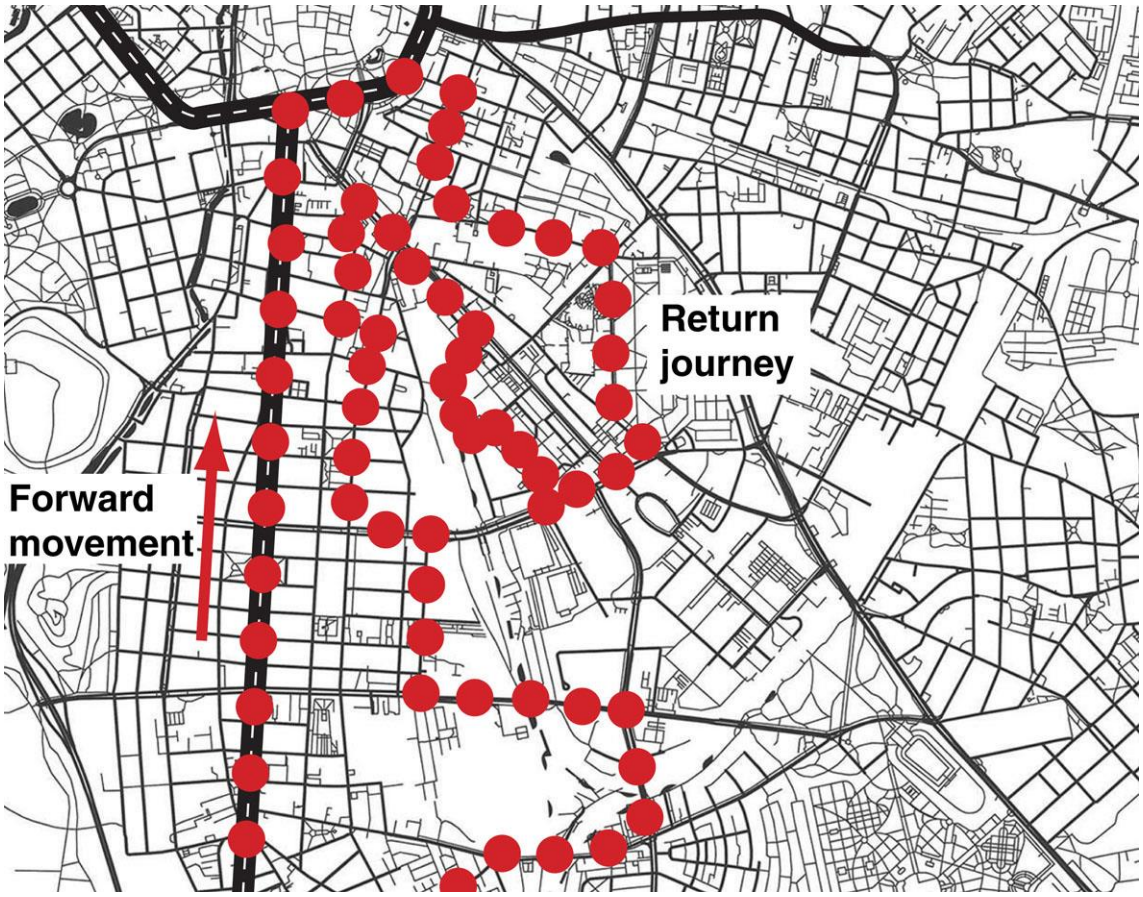
Introduction

When I studied fluid mechanics at university I attended courses in hydraulics at the School of Civil Engineering, and aerodynamics at the School of Mechanical Engineering. What this gave me was two different explanations of the same physics, and it helped me to better understand the physics.

I hope, by giving a traffic and water based (next) analogy of magnetism it will help you to better understand the physics.

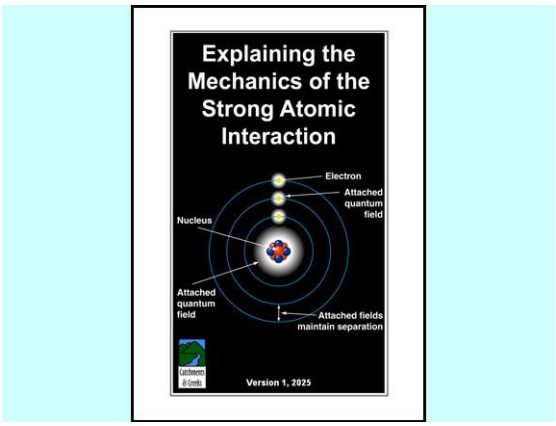
A traffic-based analogy of magnetism

- Some cars are willing to stay on the motorways and pay tolls, which contributes to the economic activity of the city.
- While other motorists wish to stay on the back roads, and twist and turn their way through the city.
- So, movement along the motorways simulates the electron flow that generates the dominant magnetic flow, while the return journey of electrons along the backgrounds is chaotic , which does not generate a reverse magnetic flow.

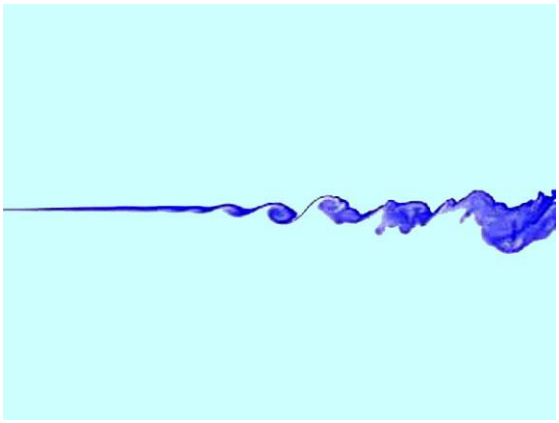


Traffic flow through a city

A water-based analogy of magnetism



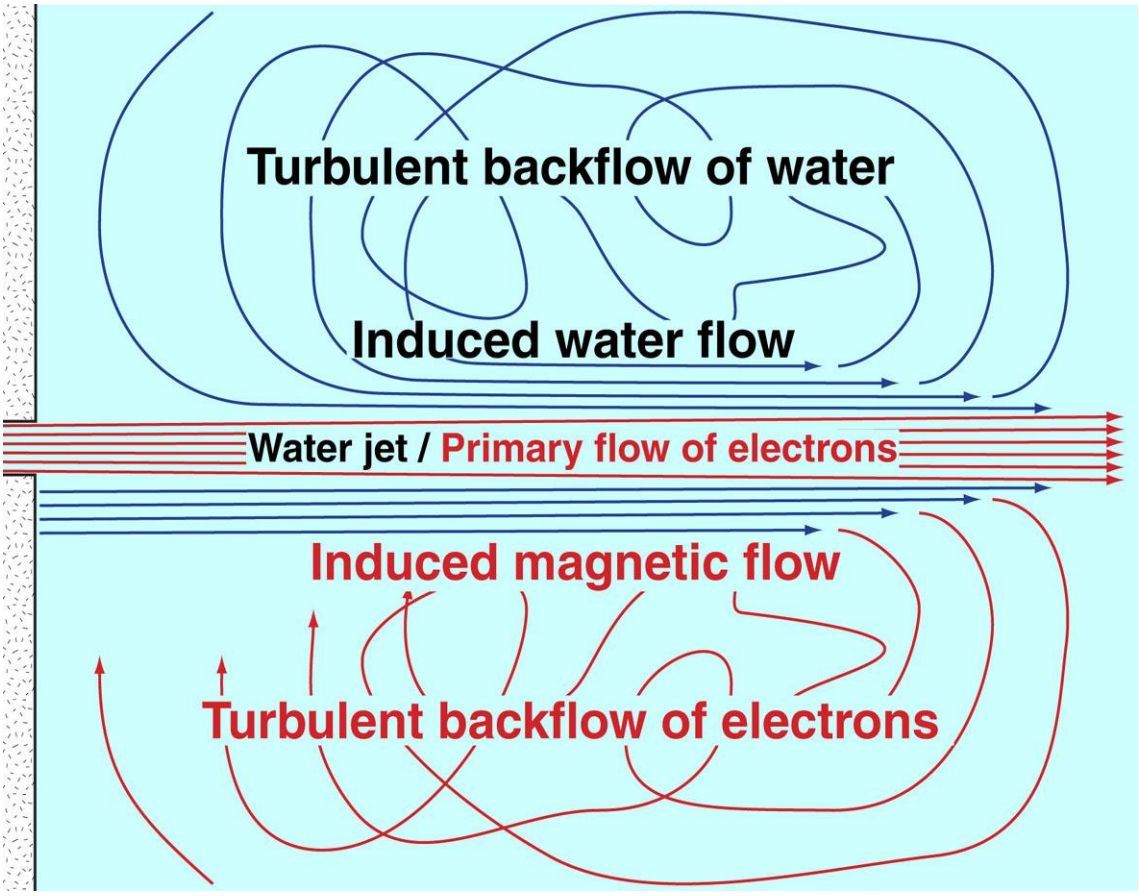
Atomic Interaction, 2025



High-velocity inflow jet

A water-based analogy of magnetism

- In water engineering, water jets and the mechanics of induced flow can be used for a variety of purposes.
- At the end of my publication: *'Explaining the Mechanics of the Strong Atomic Interaction'* I have included a discussion on the energy input that is required to achieve good mixing.
- Jetting water into a body of 'still' water is one way of achieving the mixing of fluids.
- When a jet of water enters a larger body of water, it induces a secondary flow within the water body via the effects of friction.
- Over a distance of say, 10 to 20 times the diameter of the jet, the flow of the jet will maintain its shape, with very little mixing.
- Eventually turbulence will begin to dominate, and parts of the flow will 'break away' and return in a turbulent pattern to the water surface.
- In this analogy, the water jet is the electron flow in one direction, the induced flow is the magnetic field, and the return flow represents the chaotic return flow of electrons.



Induced forward flow and turbulent backflow

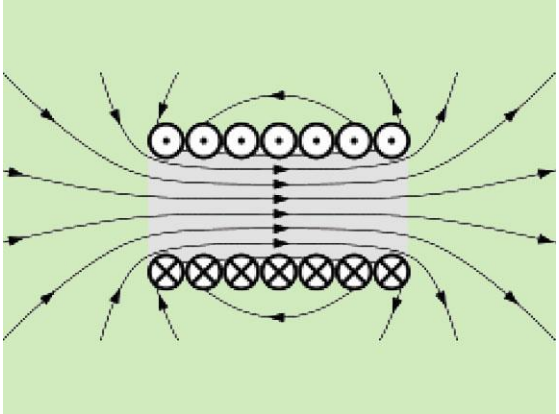
5. Electric Motors

Introduction

Electric motor

Introduction

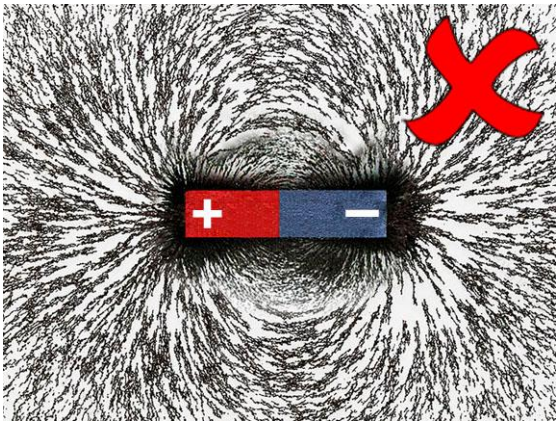
- In order to understand the physics of an electric motor, you need to understand:
  - the movement of attached quantum forces caused by the movement of physical matter (i.e. electrons)
  - the movement of travelling quantum forces caused by the movement of attached quantum forces, and
  - the movement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



Solenoid

Electric motors

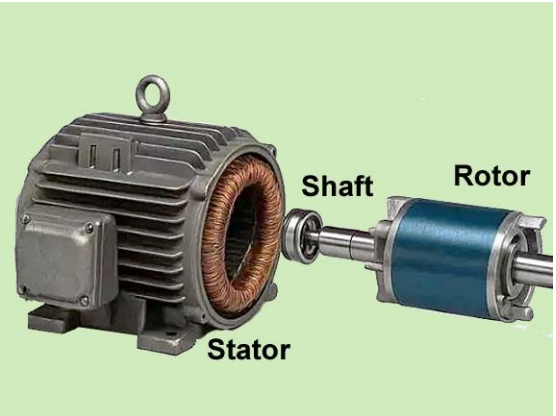
- Most motors use some form of energy to generate the mechanical action of torque or rotation.
- Electric motors use electrical current to generate mechanical motion.
- Electric motors can be adapted to the use of either direct current (DC), or alternating current (AC).
- A solenoid is a type of electric 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.

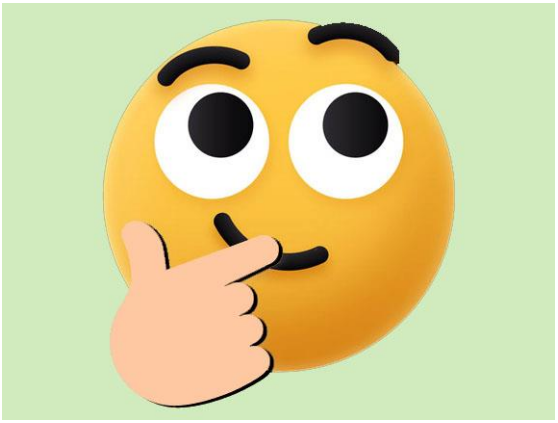


Components of an electric motor

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.

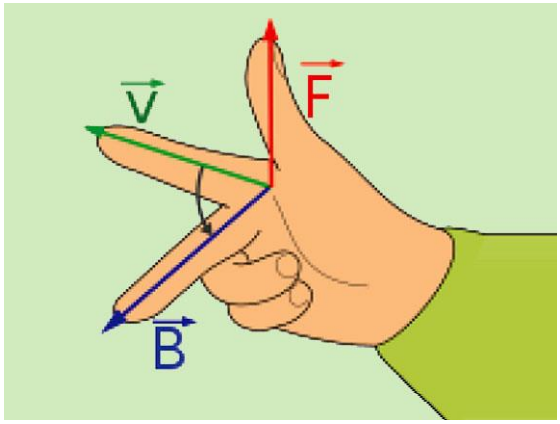
So what is it that I believe is so wrong with these statements

- 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

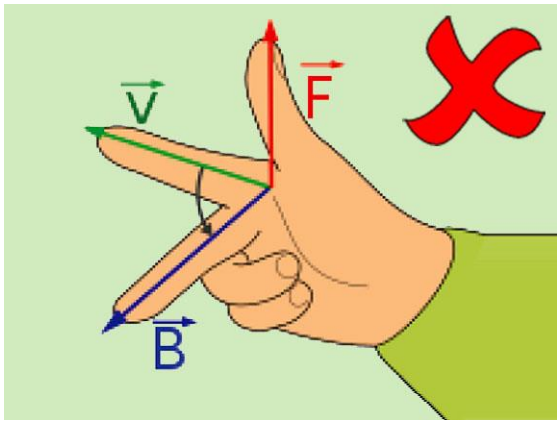


The right-hand rule (Wikipedia)

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 (?).

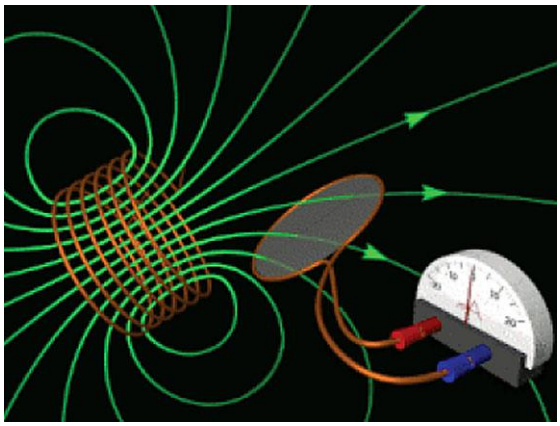
'Using the right hand, pointing the thumb in the direction of the current, and the fingers in the direction of the magnetic field, the resulting force on the charge points outwards from the palm.'



When rules don't apply

My problem

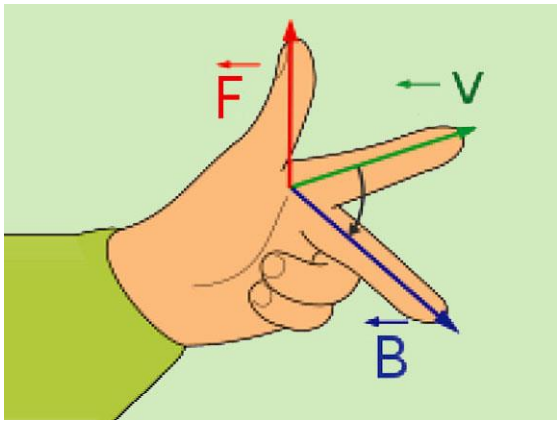
- Whichever hand and choice of axis you use, the rule does not always apply as stated.
- If the shaft is rotating slower than the 'equilibrium rotation', i.e. then the applied force is in balance with the force of resistance (friction), and the right-hand rule applies.
- However, if the shaft is rotating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

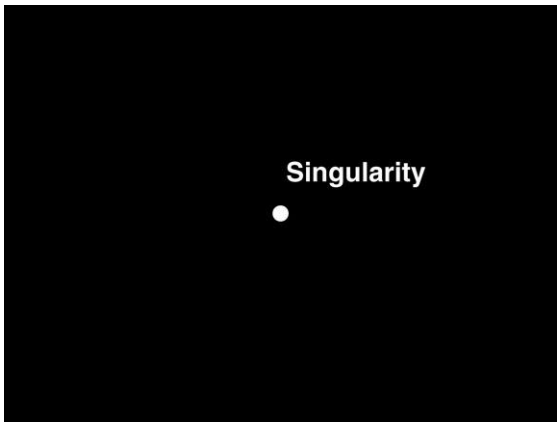


The left-hand rule

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?

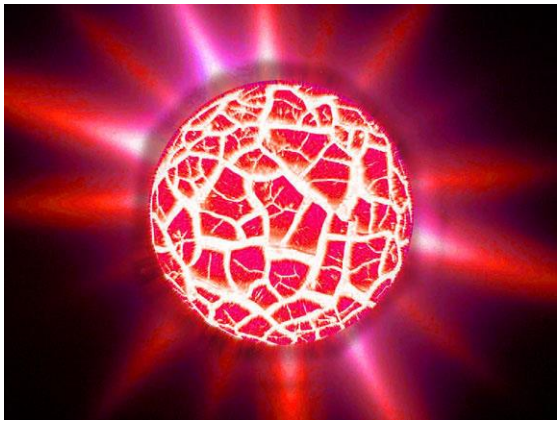
Why does a magnetic field always want to move to the 'right'



Singularity

Introduction

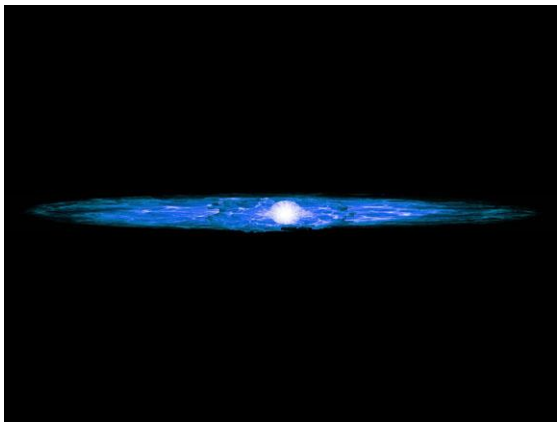
- The following discussion is pure speculation on my part, based solely on a bit of logic, and a bit of physics.
- What I am attempting to explain is:
  - what caused quantum forces to start spinning
  - why all quantum forces spin in the same direction
  - why a quantum force always wants to move to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



The Big Bang

The Big Bang

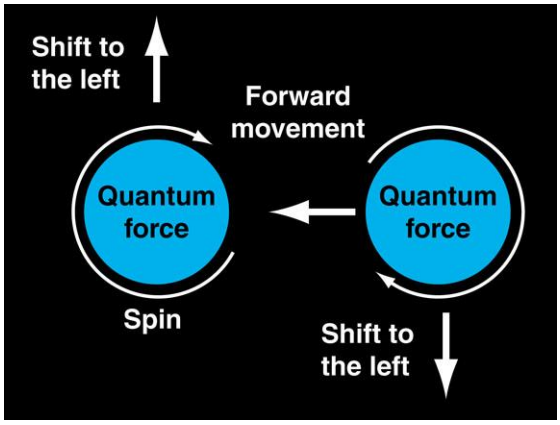
- This explanation is based on the following assumptions:
  - prior to the Big Band, the universe existed as a singularity
  - the expansion of a singularity results in a two dimensional expansion due to the effective 'cloning actions' of each unit of expansion
  - the early stages of the expansion consisted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

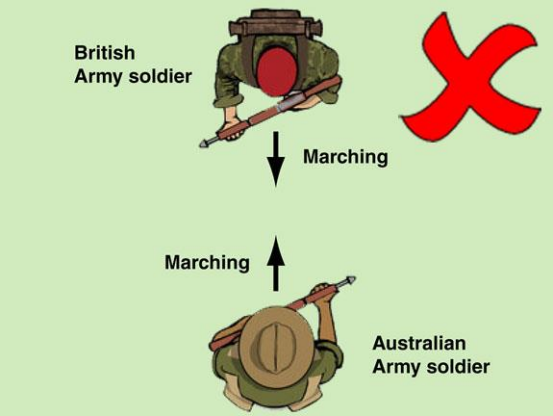


A shift to the left

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.

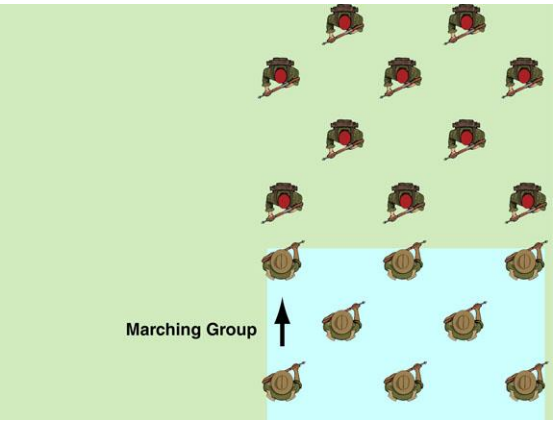
Marching group approaches a stationary group



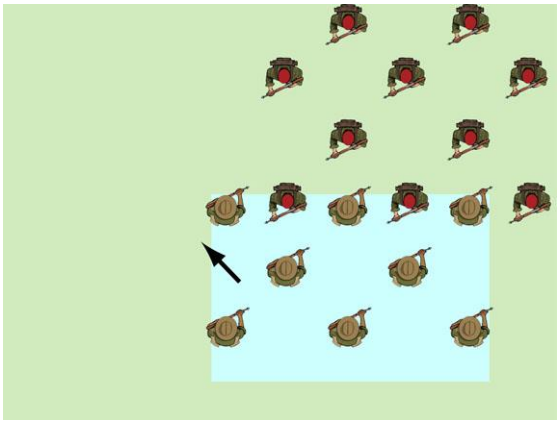
Step ‘right’ to avoid a conflict

Understanding the ‘step-to-the-left’ via a marching army analogy

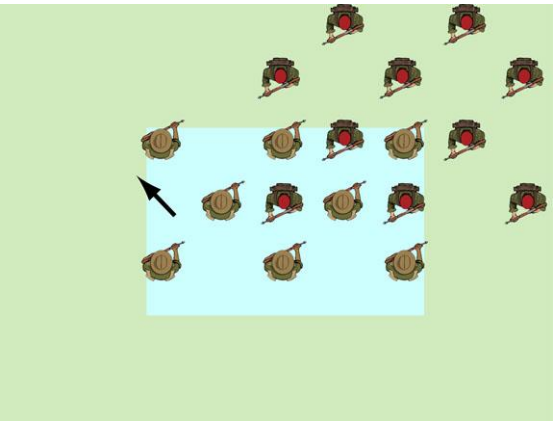
- When soldiers are marching towards each other, in order to avoid a collision, the two parties need to either step to the right of each other, or step to the left.
- However, if the approaching objects are spinning with a common axis of rotation, like quantum forces, then the direction of this step 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



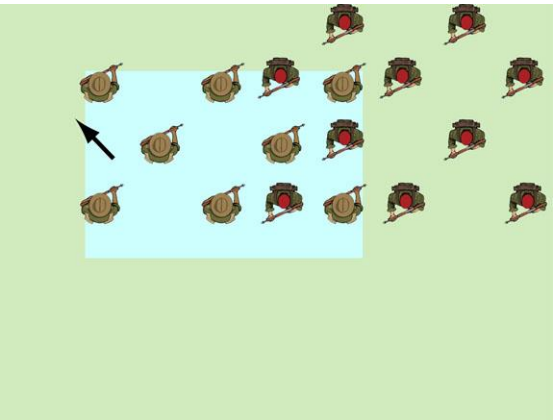
Step forward and to the left



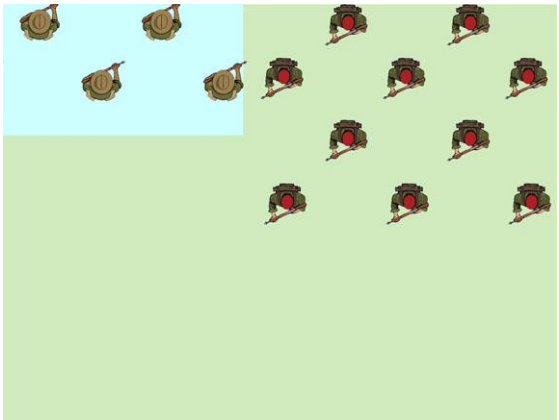
Step forward and to the left

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.



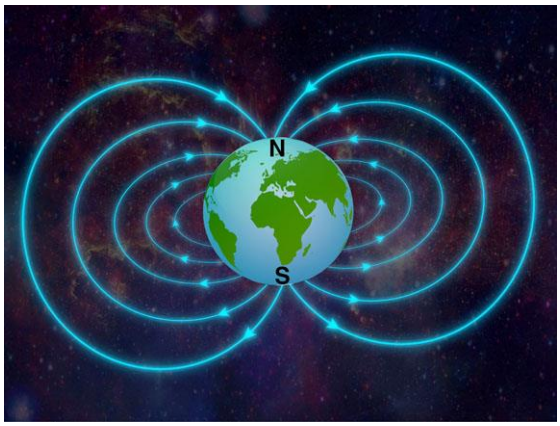
Step forward and to the left



The platoons are now separated

6. Earth’s Magnetic Field

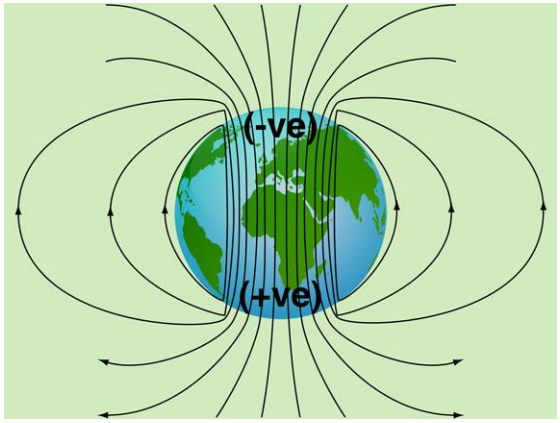
Introduction



Common representation of Earth's magnetic field

Current theory

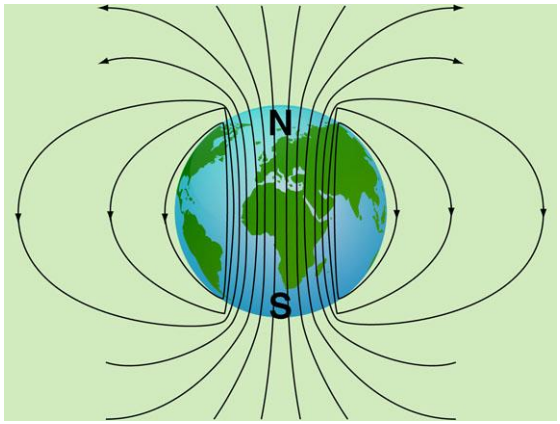
- In 2024, Wikipedia stated that:
  - *'The magnetic field is generated by electric currents due to the motion of convection currents of a mixture of molten iron and nickel in Earth's outer core: these convection currents are caused by heat escaping from the core, a natural process called a geodynamo.'*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



Conventional direction of magnetic flow

The Earth acting as a large magnet

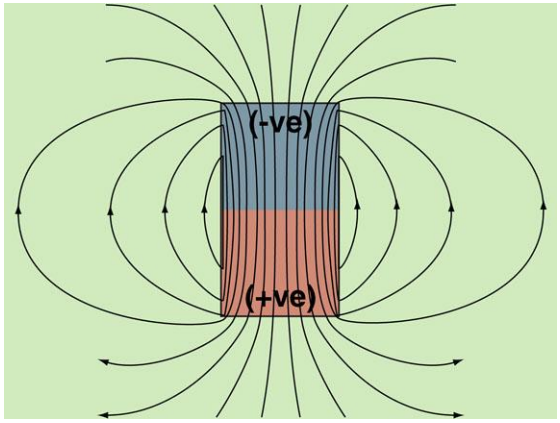
- If the Earth were a bar magnet, then Earth's North magnetic pole would represent the negative end of the magnet.
- This is because a free spinning bar magnet held on the surface of the Earth will rotate such that the positive end of the magnet will point towards the North magnetic pole, and we know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

Discussion of statements presented by other authors

Statement by others [1]

- ‘Earth's magnetic field, predominantly dipolar at its surface, is distorted further out by the solar wind. This is a stream of charged particles leaving the Sun's corona and accelerating to a speed of 200 to 1000 kilometres per second.’

My discussion

- I would suggest that explosions on the surface of the Sun are strong enough to create compression waves of quantum forces of such density to form a particle wave.
- We know that these are particle waves because their speed is much less than the speed of causality (an energy wave).

Statement by others [2]

- ‘They [solar winds] carry with them a magnetic field, the interplanetary magnetic field (IMF).’

My discussion

- I have stated that the movement of physical matter generates ‘electricity’, and that this electrical activity is of significance when the speed is very high, as it is in this case.
- The movement of these particle waves would cause the movement of attached (travelling) quantum forces, which is what generates the magnetic field.

Statement by others [3]

- ‘The solar wind exerts a pressure, and if it could reach Earth's atmosphere it would erode it.’

My discussion

- The impact of these particle waves would exert a force, along with a transfer of momentum, to Earth’s atmosphere if contact occurred.

Statement by others [4]

- ‘However, it is kept away by the pressure of the Earth's magnetic field.’

My discussion

- Earth’s magnetic field is formed from a flow of non-concentrated quantum forces, which are able to repel other quantum forces, including the compression waves projected from the Sun.
- I believe that this is the same effect that causes spacecraft to deflect of the Earth’s atmosphere if they approach at an excessively acute angle.

Statement by others [5]

- ‘Some of the charged particles do get into the magnetosphere. These spiral around field lines, bouncing back and forth between the poles several times per second. In addition, positive ions slowly drift westward and negative ions drift eastward, giving rise to a ring current.’

My discussion

- I imagine that it is possible for these waves of compressed quantum forces could easily blend with the non-compressed quantum forces that make-up Earth’s magnetic field.
- It seems logical that when these compression waves hit Earth’s magnetic field they would generate busts of light before they collapse into non-compressed quantum forces, i.e. part of Earth’s magnetic field.

Discussion of statements presented by other authors

Statement by others [6]

- ‘This current reduces the magnetic field at the Earth's surface. Particles that penetrate the ionosphere and collide with the atoms there give rise to the lights of the aurora while also emitting X-rays.’

My discussion

- At the magnetic poles, the density of the flow of quantum forces is so great that any potential collision between the solar winds and Earth’s magnetic field would potentially generate the compression wave that is ‘light’.
- The aurora lights primarily consist of the shorter wave length colours of the visible spectrum because the quantum force collisions have insufficient energy to form white light.

Statement by others [7]

- ‘Earth's magnetic field is not constant—the strength of the field and the location of its poles vary.’
- ‘Moreover, the poles periodically reverse their orientation in a process called geomagnetic reversal.’

My discussion

- I note that most diagrams of Earth’s magnetic field display the magnetic field as travelling in a straight line through the Earth (just like in a bar magnet).
- However, I would suggest that the path of the magnetic flow through Earth could be curved.
- Its curvature would depend on the circulation of moving iron and nickel.
- If the flow of molten iron and nickel reversed, and Earth’s magnetic field reversed, then it would cause Earth’s spin to slow, but Earth’s momentum would dominate, and the pole reversal would only be short-term (geologically).

Statement by others [8]

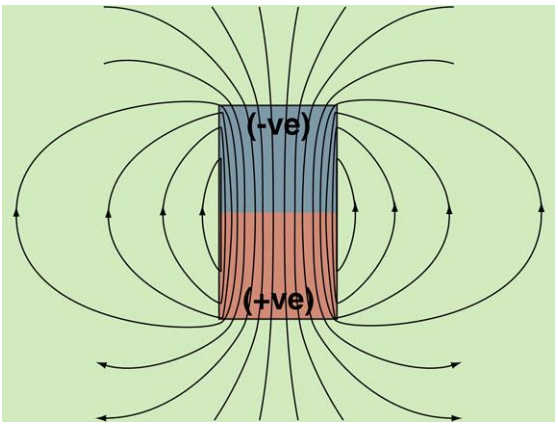
- ‘The Earth and most of the planets in the Solar System, as well as the Sun and other stars, all generate magnetic fields through the motion of electrically conducting fluids.’

My discussion

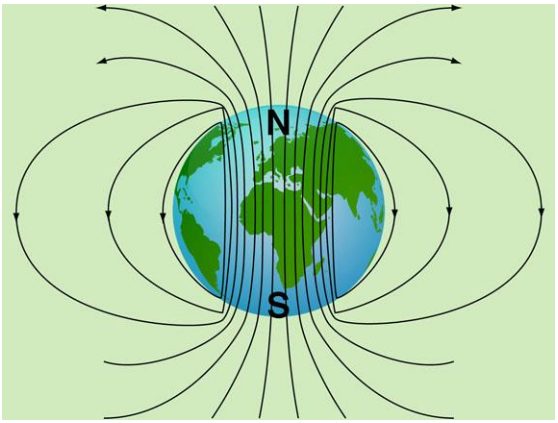
- Quantum forces would not only be attached to every electron and atom that makes-up the Earth, travelling quantum forces would exist throughout the Earth, and would travel with the Earth.
- Some of the iron and nickel contained within the Earth’s core may have arrived at Earth already magnetised as a result of its movement through the quantum forces that fill space.
- As the iron and nickel travelled through space, free quantum forces would have passed through the metals potentially causing an alignment of the molecules in a manner similar to the magnetisation process that can be manually conducted.

7. The Spinning of Planets

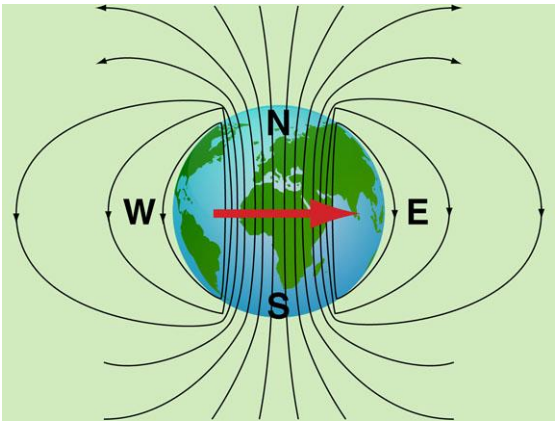
A spinning planet



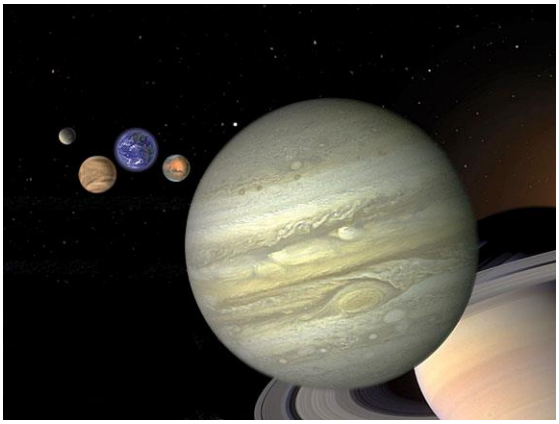
Conventional flow



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.