Unbalanced Gravitational fields

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The following is a presentation of an abstract concept using only elementary physics. By comparing properties of gravitational fall and mechanical forces, an intuitive and symmetrical interplay of fall and charged forces can be demonstrated when gravitational fall can be split into its directional components.

Abstract Bodies

Body ***A*** and ***B*** are bodies made up of an internal particle that travels back and forth along a one-dimensional pathway. It is a simple representation of internal activity of matter.

We let these particles travel at the speed of light. Each body can be considered a clock so that one round trip is a unit of time.

The circular circumference represents the end points of particle travel which defines the borders of the body.

Fig 1 particle motion within ***A*** and ***B***

Internal particle segments

Borders of stationary, uniform moving, and free falling bodies, always remain in alignment with endpoints of particle travel to retain shape and structure of the body.

Particle travel segment then is defined as the one-way segment length from one border to its opposing border as travelled by a internal particle. In a linear segment of space there are two opposing segments within each body.

When the body is not under stresses they are even in length and evenly aligned.

Fig 2 particle segment left is designated ***psl*** particle segment right is designated ***psr***

v* – *velocity ***a* - *acceleration***

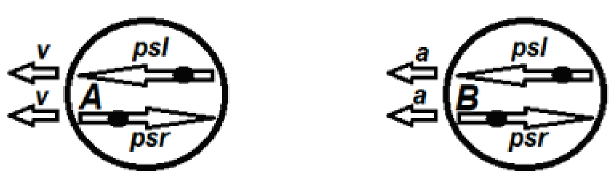
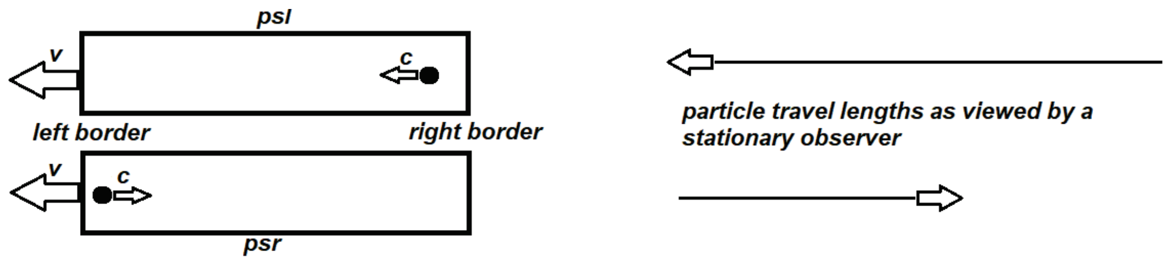


Fig 3 particle segments in relation to actual particle travel length from a body in motion



Particles within the particle segments travel at speed ***c*** in opposing directions.

The greater the speed of ***v*** the more time shifting will occur which further dilates the rate of time.

Particle segments are of fixed length (but undergo relativistic contraction) and can be accelerated to various speeds but cannot exceed ***c***.

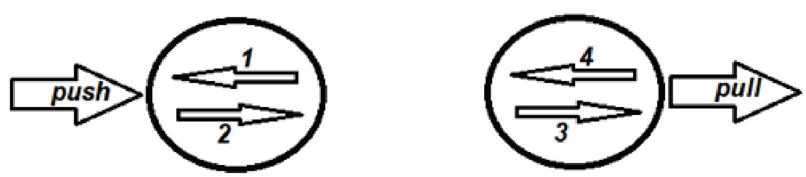
Balanced Gravitational Fall

In a gravitational field (***B*** in fall from Fig 2), equal acceleration of both particle segments ensures internal particles stay within the borders of the falling body and maintain alignment.

Bodies in balanced fall are not under external or internal stresses.

Mechanical Forces Properties of Push and Pull

Fig 4 To accelerate a Body right we can push or pull.



A push by external force right will initially contract ***psl*** by stopping short left particle travel, putting the body under compression and creating a new left border.

The body detaches from its space (accelerates) and is immediately followed by expansion of ***psr*** (originating from the new border) that alleviates the stress as it pushes the body to a new speed**.** Realignment is restored.

A pull by external force right will initially expand ***psr*** by allowing the right travelling particle to extend its journey, creating a new right border and putting the body under tension.

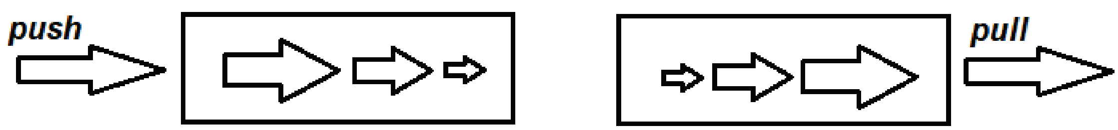
The body detaches from its space (accelerates) and is immediately followed by contraction of ***psl*** (originating from the new border) that alleviates the stress as it pulls the body to a new speed. Realignment is restored.

From fig 4
Segment 1 undergoes compression and contraction.
Segment 2 undergoes compression and expansion.
Segment 3 undergoes tension and expansion.
Segment 4 undergoes tension and contraction.

Particle segment endpoints define the boundaries of the body. Push and pull forces cause contraction or expansion of particle segments which affects the location of borders. Realignment is achieved by the body accelerating to a new speed.

Mechanical forces have a point of entry and a gradient of forces along a body that is being pushed or pulled. Internal stresses are stronger near the entry area.

Fig 5



Push causes compressive forces within which get stronger the closer to entry.

Pull causes tension forces within which get stronger the closer to entry.

Misalignment of particle segments, and the associated stresses that come with it, are the result of an unbalanced application of forces to the body.

Mechanical Forces in comparison to Fall

<u>Mechanical</u> - Point of entry – commenced by the unbalanced alteration of one particle segment - attempts to misalign particle segments - gradient of forces- internal stresses

<u>Fall</u> - No obvious point of entry of forces– no internal stresses – simultaneous balanced acceleration to both particle segments create fall with no stresses.

Unbalanced fall of particle segments and charged acceleration

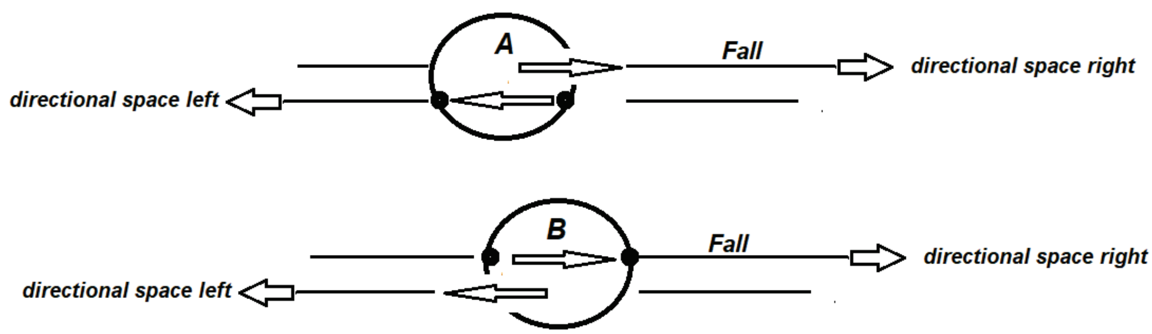
What if linear space can be divided into directional components and only one directional space creates fall. A misalignment of particle segments will occur. Does fall occur?

If two particles within a body are travelling the same length of distance in opposite directions, but one is travelling on a directional space that is in fall, then their relative distances of travel within the body are skewed.

The two particle segments within the body are being sheared apart. Misalignment is occurring and an acceleration must result.

But fall is relative and a viewpoint from the falling segment can determine that the opposite particle segment is falling in the other direction. So how is it determined which direction acceleration occurs?

Fig 6 ***A*** and ***B*** in a field where directional space right is in fall (from a non-falling viewpoint)



A feels its ***psr*** being displaced right.

B in fall, feels its ***psl*** being displaced left.

If an unbalanced change in a particle segment causes a reaction. Then the reactions of ***A*** and ***B*** are exactly opposite and depends on the body's viewpoint of which directional space is affecting its corresponding internal segment.

Primary Space and Primary Segment

Primary segment is defined as the segment which maintains its borders and undergoes no initial input of force as unbalanced fall occurs. It stays attached to its primary directional space as that space falls or doesn't fall.

A non-primary segment is the segment that is displaced by unbalanced fall and changes the location of borders. It then must be absorbing a force.

The implication is that there may be two types of matter that react in opposite fashion depending on what they determine to be their primary directional space.

Magnitude of charged acceleration vs fall

A body in fall has both particle segments accelerating in unison. Acceleration of the body is determined by the fall rate of gravitational space. The changes in travel lengths of opposing particles are balanced such that they stay within their falling segments and no changes in the location of borders occur. And hence no stresses occur.

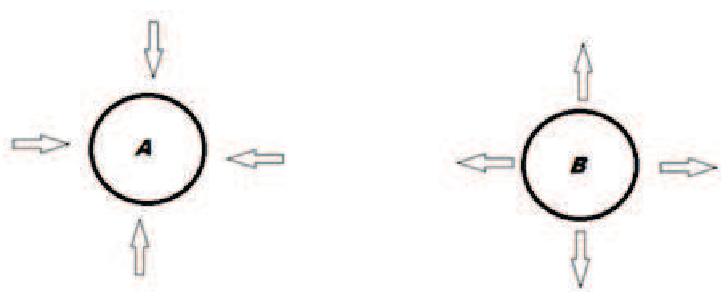
In an unbalanced field of fall however, on every particle round trip a segment is contracted or expanded causing a misalignment of segments and a jump to a new speed relative to the falling or non-falling directional space.

Charged acceleration then is proportional to the degree of misalignment in an unbalanced field and the rate of oscillation of internal particle motion. Since the internal particle travels at the speed of light, this can be a very high rate of acceleration.

Unbalanced Gravitational Space

Suppose there were two types of bodies. One creates fall on inward bound directional space only. The other on outward bound directional space.

Fig 7

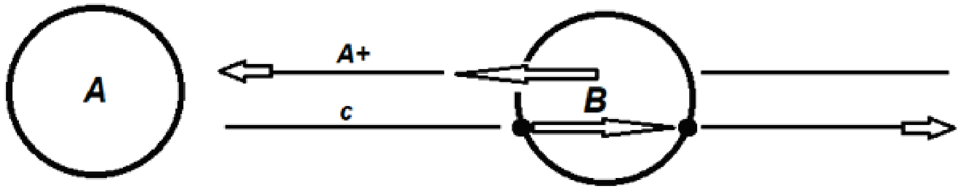


Inbound directional space from ***A*** will be defined as an ***A+*** sloped field. Outbound directional space from ***B*** will be defined as ***B-*** sloped field.

Let an ***A+*** slope be ***A's*** primary directional space. Let a ***B-*** slope be ***B's*** primary directional space.

We'll consider only fields that originate from the left. Bodies on the left are fixed in their location. Bodies on the right will initially be considered stationary.

Fig 8 ***B*** in ***A***'s field



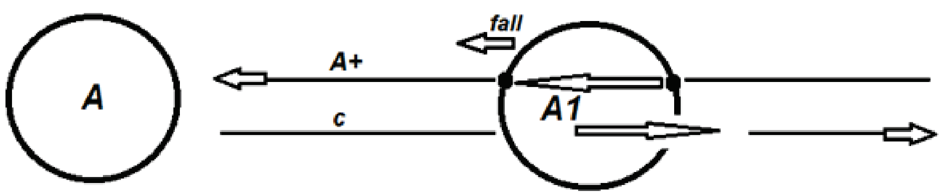
psl of ***B*** has been displaced but ***B*** feels it has been expanded.The misalignment and choice of primary directional space places ***psl***'s endpoint forward left relative to its original left border.

Particle segments must realign to configure to the new speed and undergo the consequential stresses just as they would under a mechanical force. Each time the particle travels on its left leg it sets a new speed by expansion.

B is being accelerated left by expansion in the direction of fall.

A non-primary slope affects the segment directly.

Fig 9 ***A1*** in ***A***'s field

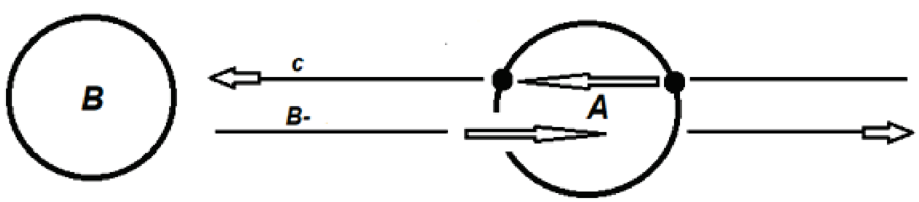


psl and ***A1*** (its borders) fall along a primary ***A+*** slope. As it falls, the right border of ***A1*** is falling left. A non-falling ***psr***'s normal distance extends beyond this border and establishes a new border to the right of the old one.

A1 is accelerated right by expansion away from ***A*** in the opposite direction of fall.

A primary slope affects particle segment on the opposite side.

Fig 10 ***A*** in ***B***'s field

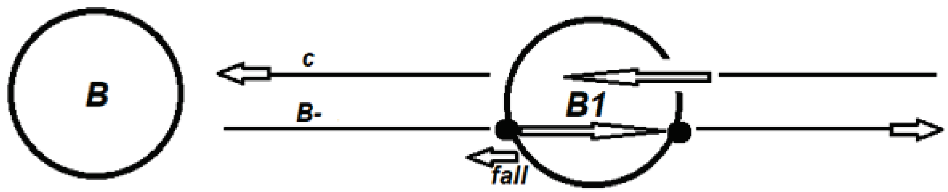


A does not fall. ***psr*** travels the same distance as ***psl*** but on a left falling directional space. It establishes a new border left of ***A***'s right border's original position.

A is accelerated left by contraction towards ***B*** in the direction of fall.

A non-primary slope affects the segment directly.

Fig 11 ***B1*** in ***B***'s field



psr and ***B1*** (its borders) fall along a ***B-*** slope. ***psl*** is not in fall and does not reach the left border. Its segment establishes a new left border to the right of the old one causing right acceleration.

B1 is accelerated right by contraction away from ***B*** in the opposite direction of fall.

A primary slope affects the segment on the opposite side.

We do not have to have bodies in free-fall to determine behavior. The affects of addition and removal of slopes are not dependent on motion or if the body is under the influence of other forces.

Affects of addition and removal of primary and non-primary slopes to particle segments

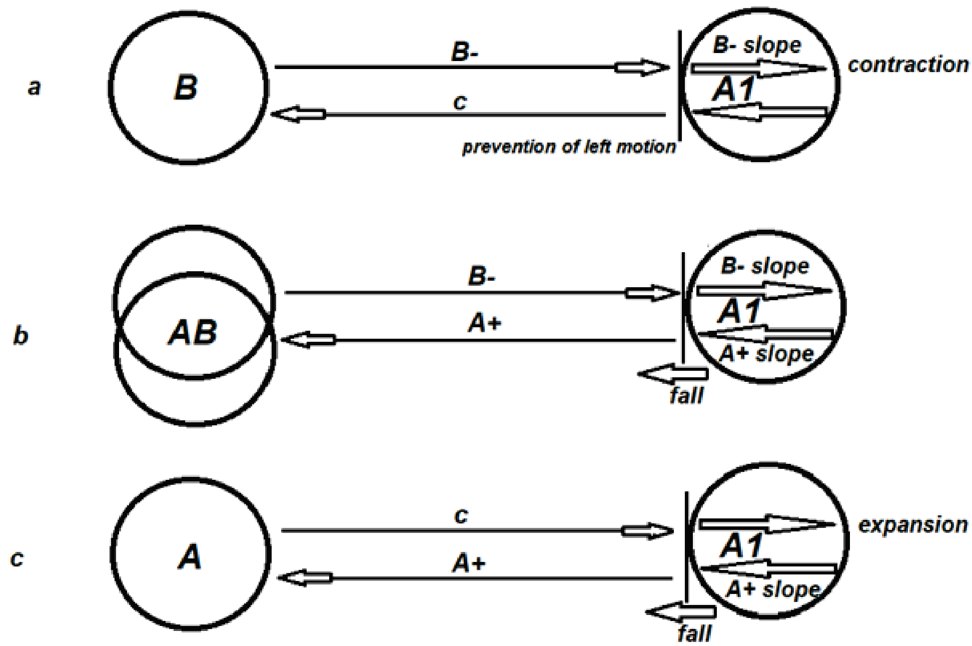
Addition of an ***A+*** slope to a particle segment in ***B*** - No fall and direct expansion of the segment. Removal of an ***A+*** slope from a particle segment in ***B*** - Direct contraction of the segment.

Addition of an ***A+*** slope to a particle segment in ***A*** - Inward fall and expansion of the opposite segment. Removal of an ***A+*** slope from a particle segment in ***A*** - Fall removal and contraction of the opposite segment.

Addition of an ***B-*** slope to a particle segment in ***A*** - No fall and direct contraction. Removal of an ***B-*** slope from a particle segment in ***A*** - Direct expansion

Addition of a ***B-*** slope to a particle segment in ***B*** - Inward fall and contraction of the opposite segment. Removal of a ***B-*** slope from a particle segment in ***B*** - Fall removal and expansion of the opposite segment..

Fig 12 Changing fields with ***A1*** to the right. ***A1*** is prevented from falling.

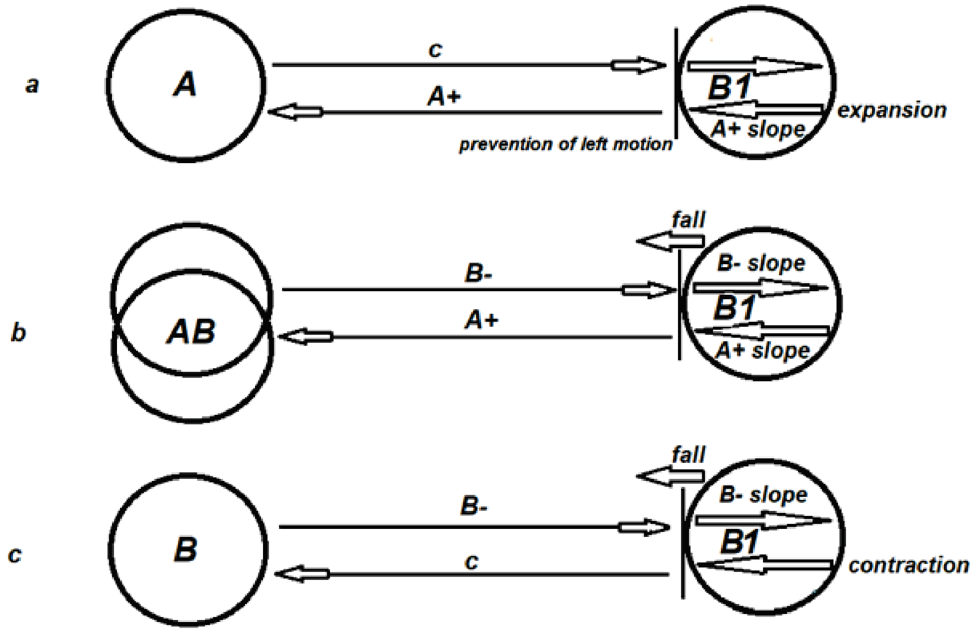


In fig 12a the addition of a ***B*** to the left of ***A1*** in a flat balanced field creates a non-primary ***B-*** slope on ***psr*** of ***A1*** which puts it in contraction. (charge force is left)

In 12b the addition of ***A*** to the left causes fall on ***A1*** which affects particle segment on the opposite side. ***psr*** of ***A1*** is expanded which cancels its contraction and ***A1*** is in a sloped balanced field with no charged forces.

In 12c the removal of a non-primary ***B-*** slope to the left of ***A1*** in a sloped balanced field removes contraction which causes expansion of ***psr*** of ***A1***. (charge force is right)

Fig 13 changing fields with ***B1*** on the right. ***B1*** is prevented from falling.

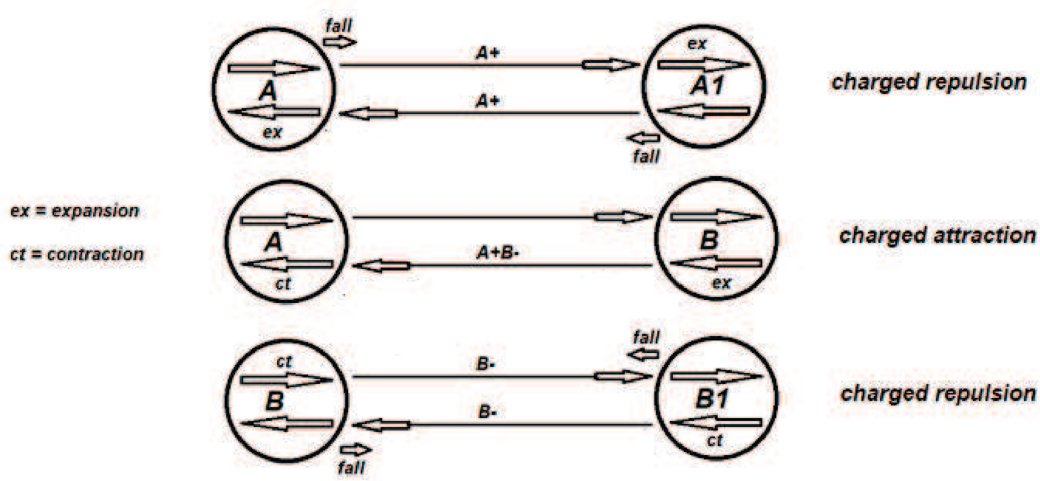


In fig 13a the addition of a non-primary ***A+ slope*** to the left of ***B1*** in a flat balanced field causes expansion of ***psl*** of ***B1***. (charge force is left)

In 13b the addition of ***B*** to the left causes fall on ***B1*** which affects particle segment on the opposite side. ***psl*** of ***B1*** is contracted which cancels its expansion and ***B1*** is in a sloped balanced field with no charged forces.

In 13c the removal of a non-primary ***A+*** slope from the left of ***B1*** in a sloped balanced field removes expansion and causes contraction of ***psl*** of ***B1***. (charge force is right)

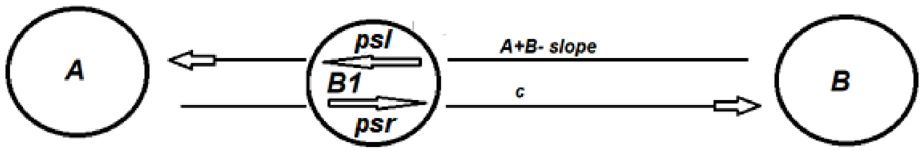
Fig 14 repel and attract



Gradient of forces in a gravitational field

What happens when ***B1*** is placed in-between ***A*** and ***B***?

Fig 15 **B1** in-between **A** and **B**



psl is being moved left by ***A***'s field and moved right by ***B***'s field. This seems to imply that no misalignment is occurring. But a ***B-*** directional space should create fall on ***psl*** and contraction of ***psr***, while an ***A+*** directional space creates expansion of ***psl***.

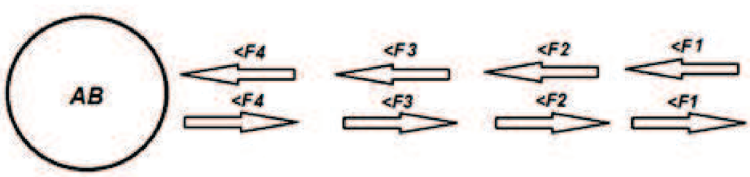
Separate reactions can only occur if ***B1*** can distinguish a difference in the type of change that its internal particle segments are being subjected to. How are the two accelerations different?

Consider a balanced gravitational field. How has space been changed?

Bodies are accelerated inwards towards a mass and the strength of fall is greater towards the source of the field. We have a source of entry and gradient of forces much like a configuration of mechanical pull. A neutral mass is the entry point of force and it pulls space inwards. The closer to the mass the stronger the pull.

Gravitational fall can be viewed as a balanced pull force on space.

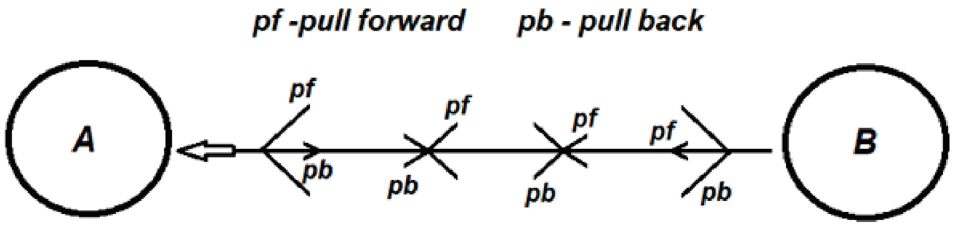
Fig 16 F4 > F3 > F2 > F1



There are two types of pulls on a directional space. Directional space outwards is pulled from behind. Its gravitational pull is inwards. This pull will be called fall by pull-back.

Directional space inwards is pulled from the front. Its gravitational pull is also inwards. This pull will be called fall by pull-forward.

Fig 17 Opposing slopes on one directional space

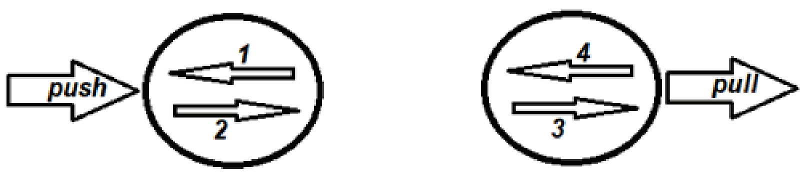


If bodies can detect and distinguish primary and non-primary pulls (pull-forward, pull-back) within a one directional space than their individual effects should be maintained.

Push or Pull   Compression or tension   Front or Behind

When undergoing mechanical acceleration there are four ways in which a force is received by a particle segment.

Fig 18



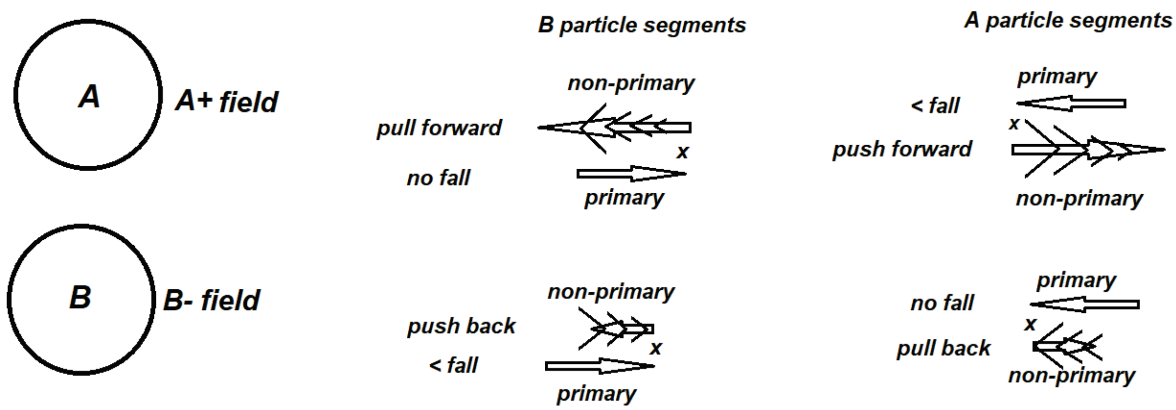
1 Push back	compression contraction	detachment of ***psl*** from the front
2 Push forward	compression expansion	detachment of ***psr*** from the back
3 Pull forward	tension expansion	detachment of ***psr*** from the front
4 Pull back	tension contraction	detachment of ***psl*** from the back

A segment whose space is undergoing an unbalanced primary change stays attached to its space as it falls and the opposite segment undergoes the initial resistance to misalignment by contraction or expansion that changes the location of borders and causes acceleration.

A segment whose space is undergoing an unbalanced non-primary change is affected directly and undergoes the initial resistance to misalignment by contraction or expansion that changes the location of borders and causes acceleration.

Push and pull forces within an accelerated non-primary particle segment are determined by how their gradient of forces are configured.

Fig 19 ***A*** and ***B*** particle segments in an ***A+*** field and a ***B-*** field. **x** is the cross over when a particle traverses from a primary directional space to an accelerating non-primary directional space. Gradient of forces is shown on the non-primary segment.



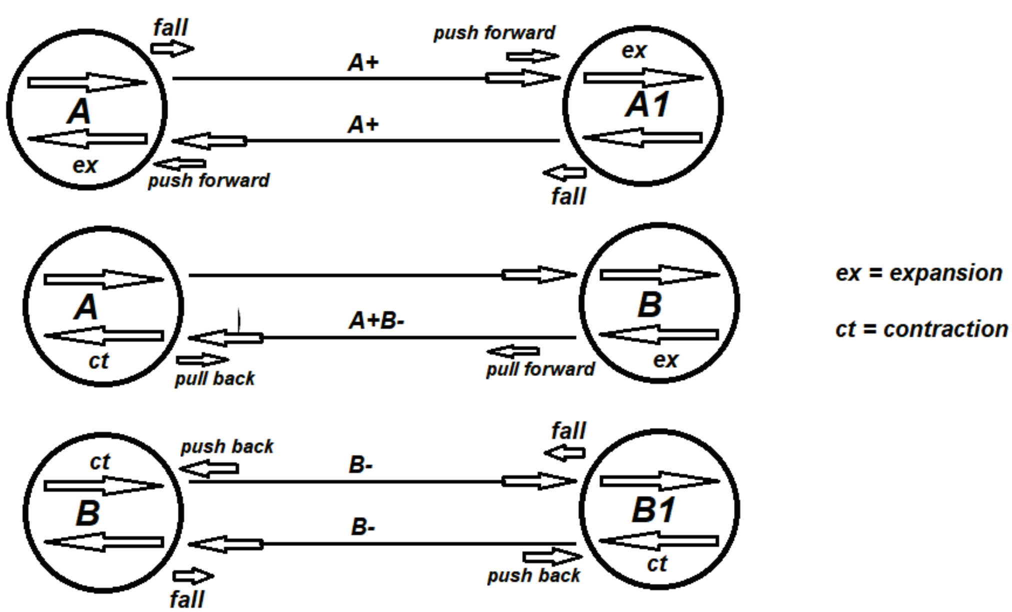
Forces are stronger closer to the source of the field creating a gradient left to right.

Pull-forward from the front causes tension and expansion. Push-forward from the back causes compresion and expansion. Pull-back from the back causes tension and contraction. Push-back from the front causes compresion and contraction.

Compresion and tension forces are relative to the primary segment. If both particle segments are being pulled in a balanced gravitational field, then the removal of pull on a non-primary segment is a relative push and compression on that segment.

Bodies are pushed out or pulled in

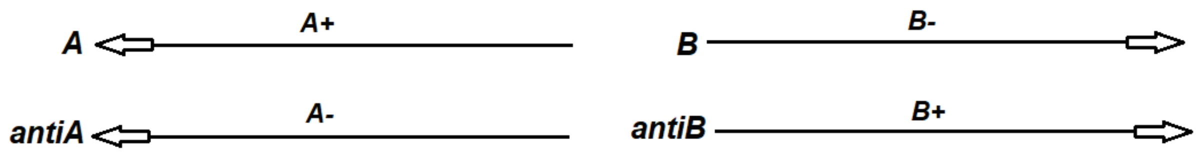
Fig 20



Falls convert the unaffected directional space on the other side to have relative push effects on opposite particle segments.

Anti Matter

Fig 21



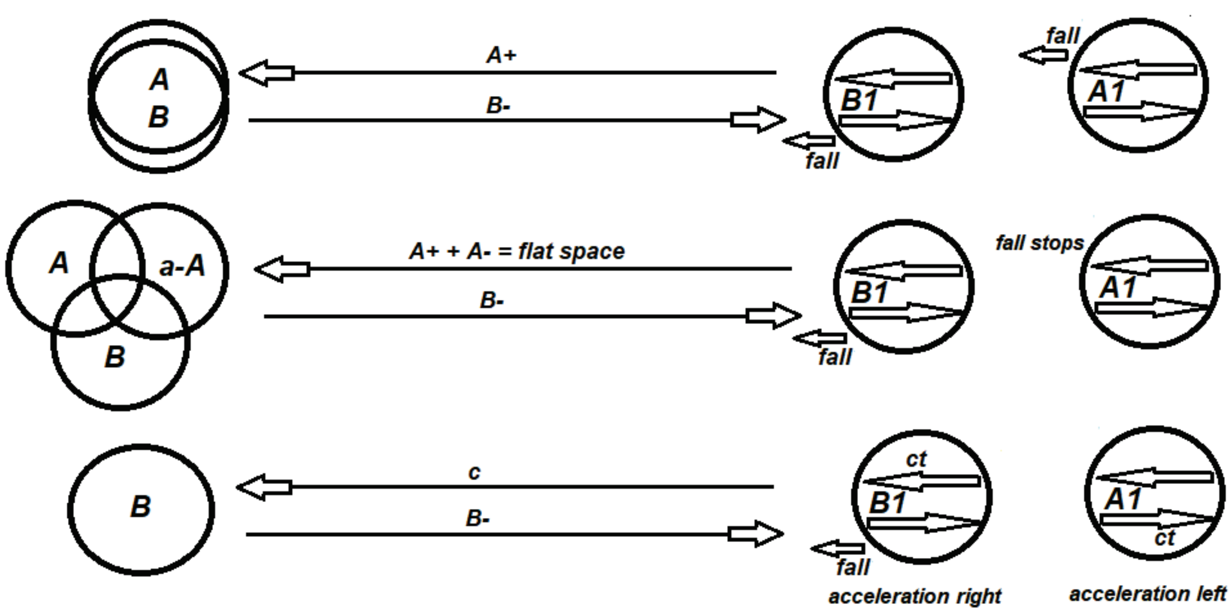
Can we eliminate slopes by adding anti slopes that flatten the field? In fig 21 an ***A-*** slope will flatten an ***A+*** slope. A ***B+*** slope will flatten a ***B-*** slope.

If all slopes must be associated with bodies, then slopes that negate slopes are considered to originate from anti-bodies.

Let the source of an ***A-*** slope be a body denoted as ***antiA (a-A)***

Let the source of a ***B+*** slope be a body denoted as ***antiB (a-B)***

Fig 22 Removing ***A*** from the source of a balanced sloped field by adding an ***a-A***. ***B1*** and ***A1*** in the field to the right.

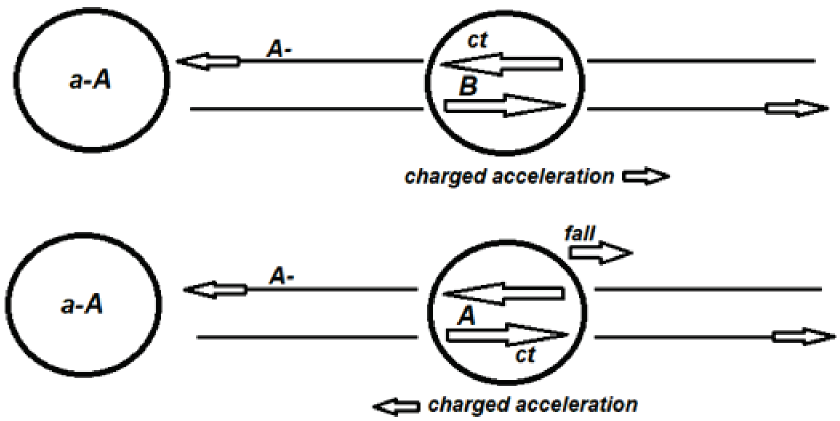


Adding an ***a-A*** body to an ***A*** body annihilates them both and flattens their directional inbound space. ***a-A*** cancels all the effects of ***A***.

a-A- Has no fall effect on ***B1*** and contracts its inbound particle segment.

a-A- Removes ***A***'s left fall and contracts its outbound particle segment.

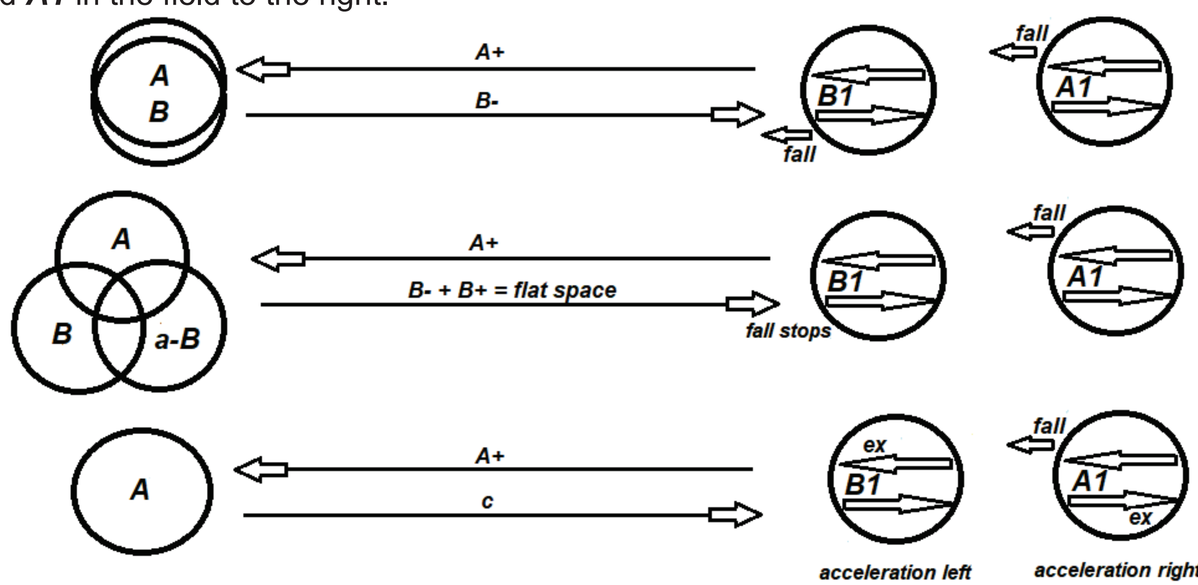
Fig 23   ***A*** and ***B*** in a flat field and the addition of ***a-A*** to the left (it may be the same field as above with us inside the field and falling with it)



In a flat field an ***A-*** slope from ***a-A*** will have no fall effect on ***B*** and will contract inbound particle segment of ***B***. ***B*** accelerates away from ***a-A*** by contraction.

In a flat field an ***A-*** slope from ***a-A*** will cause fall-back (fall-away) on ***A*** and contraction of outbound particle segment of ***A***. ***A*** accelerates inwards toward ***a-A*** by contraction.

Fig 24   Removing ***B*** from the source of a balanced sloped field by adding an ***a-B***. ***B1*** and ***A1*** in the field to the right.

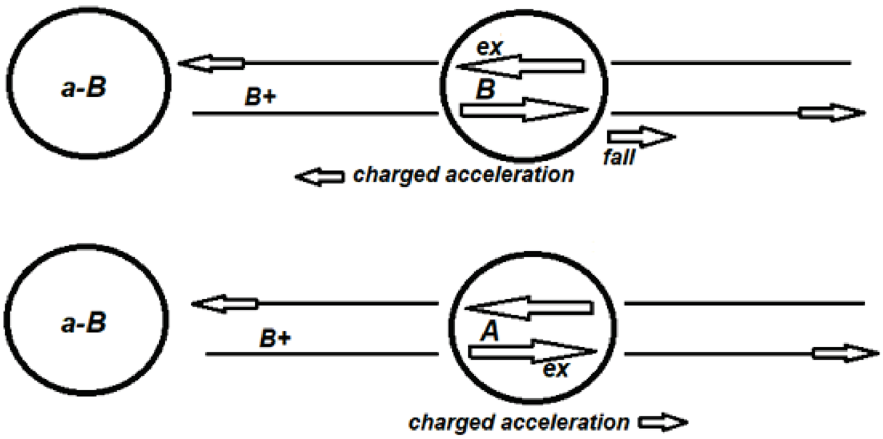


Adding an ***a-B*** body to a ***B*** body annihilates them both and flattens their directional outbound space. ***a-B*** cancels all the effects of ***B***.

a-B- Has no fall effect on ***A1*** and expands its outbound particle segment.

a-B- Removes ***B***'s fall and expands its inbound particle segment.

Fig 25 ***A*** and ***B*** in a flat field and the addition of ***a-B*** to the left

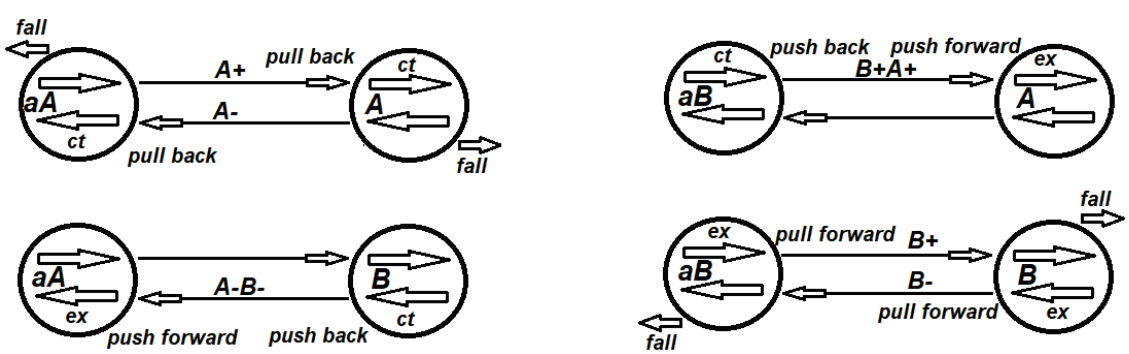


In a flat field a ***B+*** slope from ***a-B*** will cause fall-forward (fall-away) on ***B*** and expansion of inbound particle segment of ***B***. ***B*** accelerates inwards toward ***a-B*** by expansion.

In a flat field a ***B+*** slope from ***a-B*** will have no fall effect on ***A*** and will expand outbound particle segment of ***A***. ***A*** accelerates away from ***a-B*** by expansion.

In order for the law of equal and opposite reactions not to be broken, bodies must have the same effect on anti-bodies as anti-bodies on bodies. This further implies that anti-bodies relate to each other in the same manner as bodies relate to each other.

Fig 26 Fields between Bodies and Anti-bodies ct-contraction ex-expansion



Falls convert the unaffected directional space on the other side to have relative pull effects on opposite particle segments.

Relationship of forces to paired bodies

AB AB	fall attraction	no charge forces
A A	fall attraction	charged repulsion
B B	fall attraction	charged repulsion
A B	no fall	charged attraction

anti-AB anti-AB	fall attraction	no charge forces
anti-A anti-A	fall attraction	charged repulsion
anti-B anti-B	fall attraction	charged repulsion
anti-A anti-B	no fall	charged attraction

Forces are reversed when body meets antibody

AB anti-AB	fall repulsion	no charge forces
A anti-A	fall repulsion	charged attraction
B anti-B	fall repulsion	charged attraction
A anti-B	no fall	charged repulsion
B anti-A	no fall	charged repulsion

Fall fields around bodies are pull fields to bodies and push fields to antibodies.

Fall fields around anti-bodies are pull fields to anti-bodies and push fields to bodies

Directional space that pulls forward or pushes back

A body segments (anti and non-anti) retain attachment and fall. Detachment occurs on the opposite non-primary segment from the rear starting point. Changes in rear starting points (the entry point of the force) are caused by pull-back or push-forward and define the new speed.

B body segments undergo pull-forward or push-back directly, detaching from the front.

Directional space that pushes forward or pulls back

B body segments (anti and non-anti) retain attachment and fall. Detachment occurs on the opposite non-primary segment from the front end point. Changes in front end points (the entry point of the force) are caused by pull-forward or push-back and define the new speed.

A body segments undergo push-forward or pull-back directly, detaching from the back.

Summary of charged pull and push forces

Fig 27 Fall and charged effects on bodies and anti-bodies in unbalanced fields