

The Parallel Postulate is Depended on the Other Axioms

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Abstract In the manuscript is proved that parallel postulate is only in Plane (three points only) and is based on the four Postulates for Constructions, where all properties of Euclidean geometry compactly exist as Extrema on points, lines, planes, circles and spheres. Projective, Hyperbolic and Elliptic geometry is proved to be an Extrema (deviations) in Euclidean geometry where on them Einstein's theory of general relativity is implicated approximately to the properties of physical space.

Keywords: parallel postulate, Euclid geometry

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1. Introduction

Euclid's elements consist of assuming a small set of intuitively appealing axioms and from them, proving many other propositions (theorems). Although many of Euclid's results have been stated by earlier Greek mathematicians, Euclid was the first to show how these propositions could be fit together into a comprehensive deductive and logical system self consistent. Because nobody until now succeeded to prove the parallel postulate, many self consistent non-Euclidean geometries have been discovered based on Definitions, Axioms or Postulates, in order that non of them contradicts any of the other postulates of what actually are or mean. In the manuscript is proved that parallel postulate is only in Plane (three points only) and is based on the four Postulates for Constructions, where all properties of Euclidean geometry compactly exist as Extrema on points, lines, planes, circles and spheres. Projective, Hyperbolic and Elliptic geometry is proved to be an Extrema (deviations) [15] in Euclidean geometry where on them Einstein's theory of general relativity is implicated and calls a segment as line and the disk as plane in physical space.

It have been shown that the only Space-Energy geometry is the Euclidean, on primary and on any vector unit AB, ($AB = \text{The Quantization of points and of Energy}$) on the contrary to the general relativity of Space-time which is based on the rays of the non-Euclidean geometries and to the limited velocity of light. Euclidean geometry describes Space-Energy and also its deviations which describe as Space-time. Quantization is holding on points and Energy [Space-Energy], where Time is vanished [PNS], and not on points and Time [Space-time] which is deviation [21].

2. Euclid Elements for a Proof of the Parallel Postulate (Axiom)

Axiom or Postulate is a statement checked if it is true and is ascertained with logic (the experiences of nature as objective reality).

Theorem or Proposition is a non-main statement requiring a proof based on earlier determined logical properties.

Definition is an initial notion without any sensible definition given to other notions.

Definitions, Propositions or Postulates created Euclid geometry using the geometrical logic which is that of nature, the logic of objective reality.

Using the same elements it is possible to create many other geometries but the uniting element is the before refereed.

2.1. The First Definitions (D) Of Terms in Geometry

D1: A point is that which has no part (Position)

D2: A line is a breathless length (for straight line, the whole is equal to the parts)

D3: The extremities of lines are points (equation).

D4: A straight line lies equally with respect to the points on itself (identity).

D: A midpoint C divides a segment AB (of a straight line) in two. $CA = CB$ any point C divides all straight lines through this in two.

D: A straight line AB divides all planes through this in two.

D: A plane ABC divides all spaces through this in two

2.2. Common Notions (Cn)

Cn1: Things which equal the same thing also equal one another.

Cn2: If equals are added to equals, then the wholes are equal.

Cn3: If equals are subtracted from equals, then the remainders are equal.

Cn4: Things which coincide with one another, equal one another.

Cn5: The whole is greater than the part.

2.3. The Five Postulates (P) for Construction

P1. To draw a straight line from any point A to any other B.

P2. To produce a finite straight line AB continuously in a straight line.

P3. To describe a circle with any centre and distance. P1, P2 are unique.

P4. That, all right angles are equal to each other.

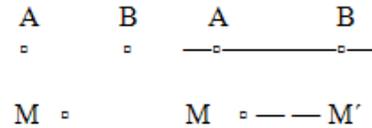
P5. That, if a straight line falling on two straight lines make the interior angles on the same side less than two right angles, if produced indefinitely, meet on that side on which are the angles less than the two right angles, or (for three points on a plane)

5a. The same is plane's postulate which states that, from any point M, not on a straight line AB, only one line MM' can be drawn parallel to AB.

Since a straight line passes through two points only and because point M is the third then the parallel postulate it is valid on a plane (three points only).

3. The Method

AB is a straight line through points A, B. Since $MA+MB > AB$ then point M is not on AB (differently if $MA+MB = AB$ answers the question of why any line contains at least two points i.e. for any point M on line AB is holding $MA+MB = AB$, meaning that lines MA, MB coincide) and according to D2 any line contains at least two points, so is not an axiom.



To prove that, one and only one line MM' can be drawn parallel to AB.

To prove the above Axiom is necessary to show:

- The parallel to AB is the locus of all points at a constant distance h from the line AB, and for point M is MA1,
- The locus of all these points is a straight line.

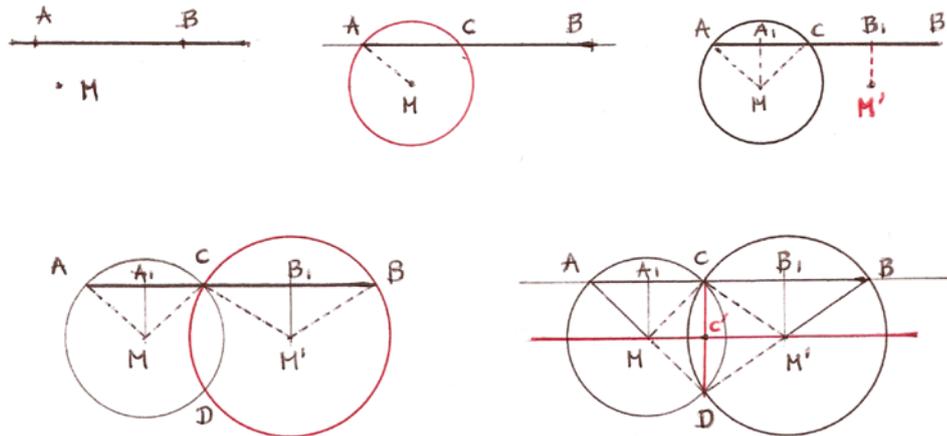


Figure 1.

The Method - (Figure 1)

Step 1

Draw the circle (M, MA) be joined meeting line AB in C. Since $MA = MC$, point M is on mid-perpendicular of AC. Let A1 be the midpoint of AC, (it is $A1A+A1C = AC$ because A1 is on the straight line AC. Triangles MAA1, MCA1 are equal because the three sides are equal, therefore angle $\angle MA1A = \angle MA1C$ (CN1) and since the sum of the two angles $\angle MA1A + \angle MA1C = 180^\circ$ (CN2, 6D) then angle $\angle MA1A = \angle MA1C = 90^\circ$. (P4) so, MA1 is the minimum fixed distance h of point M to AC.

Step 2

Let B1 be the midpoint of CB, (it is $B1C+B1B = CB$ because B1 is on the straight line CB) and draw $B1M' = h$ equal to A1M on the straight-perpendicular from point B1 to CB. Draw the circle (M', M'B = M'C) intersecting the circle (M, MA = MC) at point D. (P3) Since $M'C = M'B$, point M' lies on mid-perpendicular of CB. (CN1)

Since $M'C = M'D$, point M' lies on mid-perpendicular of CD. (CN1) Since $MC = MD$, point M lies on mid-perpendicular of CD. (CN1) Because points M and M' lie on the same mid-perpendicular (This mid-perpendicular is drawn from point C' to CD and it is the midpoint of CD)

and because only one line MM' passes through points M, M' then line MM' coincides with this mid-perpendicular (CN4)

Step 3

- Draw the perpendicular of CD at point C'. (P3, P1)
- Because $MA1 \perp AC$ and also $MC' \perp CD$ then angle $\angle A1MC' = \angle A1CC'$. (Cn 2, Cn3, E.I.15) Because $M'B1 \perp CB$ and also $M'C' \perp CD$ then angle $\angle B1M'C' = \angle B1CC'$. (Cn2, Cn3, E.I.15)
 - The sum of angles $\angle A1CC' + \angle B1CC' = 180^\circ = \angle A1MC' + \angle B1M'C'$. (6.D), and since Point C' lies on straight line MM', therefore the sum of angles in shape A1B1M'M are $\angle MA1B1 + \angle A1B1M' + [\angle B1M'M + \angle M'MA1] = 90^\circ + 90^\circ + 180^\circ = 360^\circ$ (Cn2), i.e. The sum of angles in a Quadrilateral is 360° and in Rectangle all equal to 90° . (m)
 - The right-angled triangles MA1B1, M'B1A1 are equal because $A1M = B1M'$ and A1B1 common, therefore side $A1M' = B1M$ (Cn1). Triangles A1MM', B1M'M are equal because have the three sides equal each other, therefore angle $\angle A1MM' = \angle B1M'M$, and since their sum is 180° as before (6D), so angle $\angle A1MM' = \angle B1M'M = 90^\circ$ (Cn2).

- d. Since angle $\angle A1MM' = A1CC'$ and also angle $\angle B1M'M = B1CC'$ (P4), therefore quadrilaterals $A1CC'M$, $B1CC'M'$, $A1B1M'M$ are Rectangles (CN3). From the above three rectangles and because all points (M, M' and C') equidistant from AB, this means that C'C is also the minimum equal distance of point C' to line AB or, $h = MA1 = M'B1 = CD / 2 = C'C$ (Cn1) Namely, line MM' is perpendicular to segment CD at point C' and this line coincides with the mid-perpendicular of CD at this point C' and points M, M', C' are on line MM'. Point C' equidistant, h, from line AB, as it is for points M, M', so the locus of the three points is the straight line MM', so the two demands are satisfied, ($h = C'C = MA1 = M'B1$ and also $C'C \perp AB$, $MA1 \perp AB$, $M'B1 \perp AB$). (o.e.δ.)
- e. The right-angle triangles $A1CM$, MCC' are equal because side $MA1 = C'C$ and MC common so angle $\angle A1CM = C'MC$, and the Sum of angles $C'MC + MCB1 = A1CM + MCB1 = 180^\circ$

- 180°, so the sum of angles in quadrilateral MA1B1M' is equal to 360°.
4. The right-angled triangles MA1B1, M'B1A1 are equal, so diagonal MB1 = M'A1 and since triangles A1MM', B1M'M are equal, then angle $\angle A1MM' = \angle B1M'M$ and since their sum is 180°, therefore angle $\angle A1MM' = \angle M'MB1 = \angle M'B1A1 = \angle B1A1M = 90^\circ$
5. Since angle $\angle A1CC' = \angle B1CC' = 90^\circ$, then quadrilaterals $A1CC'M$, $B1CC'M'$ are rectangles and for the three rectangles MA1CC', CB1M'C', MA1B1M' exists $MA1 = M'B1 = C'C$
6. The right-angled triangles MCA1, MCC' are equal, so angle $\angle A1CM = C'MC$ and since the sum of angles $\angle A1CM + \angle MCB1 = 180^\circ$ then also $C'MC + \angle MCB1 = 180^\circ \rightarrow$
- which is the second to show, as this problem has been set at first by Euclid.

All above is a Proof of the Parallel postulate due to the fact that the parallel postulate is dependent of the other four axioms (now is proved as a theorem from the other four). Since AB is common to ∞ Planes and only one Plane is passing through point M (Plane ABM from the three points A, B, M), then the Parallel Postulate is valid for all Spaces which have this common Plane, as Spherical, n-dimensional geometry Spaces. It was proved that it is a necessary logical consequence of the others axioms, agree also with the Properties of physical objects, $d + 0 = d$, $d * 0 = 0$, now is possible to decide through mathematical reasoning, that the geometry of the physical universe is Euclidean. Since the essential difference between Euclidean geometry and the two non-Euclidean geometries Spherical and hyperbolic geometry, is the nature of parallel line, i.e. the parallel postulate so,

<<The consistent System of the - non-Euclidean geometry - have to decide the direction of the existing mathematical logic >>.

The above consistency proof is applicable to any line Segment AB on line AB, (segment AB is the first dimensional unit, as $AB = 0 \rightarrow \infty$), from any point M not on line AB, [$MA + MB > AB$ for three points only which consist the Plane. For any point M between points A, B is holding $MA + MB = AB$ i.e. from two points M, A or M, B passes the only one line AB. A line is also continuous (P1) with points and discontinuous with segment AB [14], which is the metric defined by non- Euclidean geometries], and it is the answer to the cry about the < crisis in the foundations of Euclid geometry > (Figure 2)

3.1. The Succession of Proofs

1. Draw the circle (M, MA) be joined meeting line AB in C and let A1, B1 be the midpoint of CA, CB.
2. On mid-perpendicular B1M' find point M' such that M'B1 = MA1 and draw the circle (M', M'B = M'C) intersecting the circle (M, MA = MC) at point D.
3. Draw mid-perpendicular of CD at point C'.
4. To show that line MM' is a straight line passing through point C' and it is such that $MA1 = M'B1 = C'C = h$, i.e. a constant distance h from line AB or, also The Sum of angles $C'MC + MCB1 = A1CM + MCB1 = 180^\circ$

3.2. Proofed Succession

1. The mid-perpendicular of CD passes through points M, M'.
2. Angle $\angle A1MC' = \angle A1MM' = \angle A1CC'$, Angle $\angle B1M'C' = \angle B1M'M = \angle B1CC'$ $\angle A1MC' = \angle A1CC'$ because their sides are perpendicular among them i.e. $MA1 \perp CA, MC' \perp CC'$.
 - a. In case $\angle A1MM' + \angle A1CC' = 180^\circ$ and $\angle B1M'M + \angle B1CC' = 180^\circ$ then $\angle A1MM' = 180^\circ - \angle A1CC'$, $\angle B1M'M = 180^\circ - \angle B1CC'$, and by summation $\angle A1MM' + \angle B1M'M = 360^\circ - \angle A1CC' - \angle B1CC'$ or Sum of angles $\angle A1MM' + \angle B1M'M = 360^\circ - (\angle A1CC' + \angle B1CC') = 360^\circ - 180^\circ = 180^\circ$
3. The sum of angles $\angle A1MM' + \angle B1M'M = 180^\circ$ because the equal sum of angles $\angle A1CC' + \angle B1CC' =$

4. The Types of Geometry

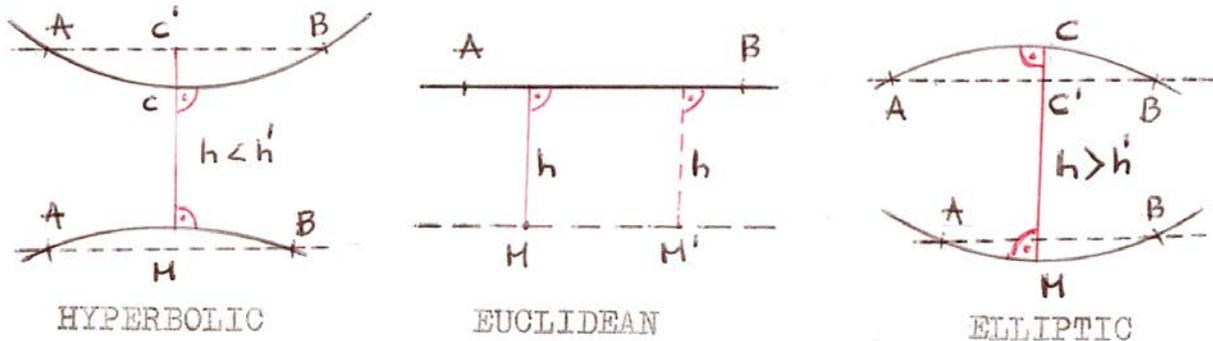


Figure 2. (Hyperbolic Euclidean Elliptic) The structure of euclidean geometry

Any single point A constitutes a Unit without any Position and dimension (non-dimensional= Empty Space) simultaneously zero, finite and infinite. The unit meter of Point is equal to 0.

Any single point B , not coinciding with A , constitutes another one Unit which has also dimension zero. Only one Straight line (i.e. the Whole is equal to the Parts) passes through points A and B ,which consists another un-dimensional Unit,since is consisted of infinite points with dimension zero. A line Segment AB between points A and B (either points A and B are near zero or are extended to the infinite), consists the first Unit with one dimensional, the length AB, beginning from Unit A and a regression ending in Unit B. $AB = 0 \rightarrow \infty$, is the one-dimensional Space. The unit meter of AB is $m = 2.(AB/2) = AB$ because only one middle point exists on AB and since also is composed of infinite points which are filling line, then nature of line is that of Point (the all is one for Lines and Points).

Adding a third point C , outside the straight line AB , $(CA+CB > AB)$, then is constituted a new Unit (the Plane) without position, since is consisted of infinite points, without any position. Shape ABC enclosed between parts AB, AC, BC is of two dimensional, the enclosed area ABC, and since is composed of infinite Straight lines which are filling Plane , then, nature of Plane is that of Line and that of Points (the all is one for Planes , Lines and Points). Following harmony of unit meter $AB=AC=BC$, then Area $ABC = 0 \rightarrow \infty$, is the two-dimensional Space with unit meter equal to $m = 2.(\pi.AB/\sqrt{2})^2 = \pi.AB^2$, i.e. one square equal to the area of the unit circle.

Four points A,B,C,D (...) not coinciding, consist a new Unit (the Space or Space Layer) without position also, which is extended between the four Planes and all included, forming Volume ABCD and since is composed of infinite Planes which are filling Space, then, nature of Space is that of Plane and that of Points (the all is one for Spaces, Planes, Lines and Points). Following the same harmony of the first Unit, shape ABCD is the Regular Tetrahedron with volume $ABCD = 0 \rightarrow \infty$, and it is the three-dimensional Space.

The dimension of Volume is $4 - 1 = 3$. The unit measure of volume is the side X of cube X^3 twice the volume of another random cube of side $a = AB$ such as $X^3 = 2.a^3$ and $X = \sqrt[3]{2}.a$ Geometry measures Volumes with side X related to the problem of doubling of the cube.

In case that point D is on a lower Space Layer, then all Properties of Space, or Space Layer are transferred to the corresponding Unit, i.e. to Plane or to the Straight line or to the Point.

This Concentrated (Compact) Logic of geometry [CLG] exists for all Space – Layers and is very useful in many geometrical and physical problems. (exists, Quality = Quantity, since all the new Units are produced from the same, the first one , dimensional Unit AB).

N points represent the N-1 dimensional Space or the N-1 Space Layer,DL, and has analogous properties and measures.Following the same harmony for unit AB, $(AB = 0 \rightarrow \infty)$ then shape $ABC...M$ (i.e. the ∞ spaces $AB = 1, 2,...nth$) is the Regular Solid in Sphere $ABC...M = 0 \rightarrow \infty$. This N Space Layer is limiting to ∞ as $N \rightarrow \infty$. Proceeding inversely with roots of any unit $AB = 0 \rightarrow \infty$ (i.e. the Sub-Spaces are the roots of $AB, \sqrt[2]{AB}, \sqrt[3]{AB},... \sqrt[n]{AB}$ then it is $\sqrt[n]{AB} = 1$ as $n \rightarrow \infty$), and since all roots of unit AB are the vertices of the Regular Solids in Spheres then this n Space Layer is limiting to 0 as $n \rightarrow \infty$ The dimensionality of the physical universe is unbounded (∞) but simultaneously equal to (1) as the two types of Spaces and Sub-Spaces show.

Because the unit-meters of the N-1 dimensional Space Layers coincide with the vertices of the nth-roots of the first dimensional unit segment AB as $AB = \infty \rightarrow 0$, which is point, (the vertices of the n-sided Regular Solids) , therefore the two Spaces are coinciding (the Space Layers and the Sub-Space Layers are in superposition on the same monads).[Figure 5]

That is to say, Any point on the Nth Space or Space-Layer, of any unit $AB = 0 \rightarrow \infty$, jointly exists partly or whole, with all Subspaces of higher than N Spaces, $N = (N+1) - 1 = (N+2) - 2 = (N+N)-N... = (N+\infty) - \infty$, where $(N+1),...,(N+\infty)$ are the higher than N Spaces, and with all Spaces of lower than N Subspaces, $N = (N-1) + 1 = (N-2)+2 = (N-N)+N = (N-\infty) + \infty$, where $(N-1), (N-2), (N-N), (N-\infty)$ are the lower than N Spaces.

The boundaries of N points, corresponding to the Space, have their unit meter of the Space and is a Tensor of N dimension (i.e. the unit meters of the N roots of unity AB), simultaneously, because belonging to the Sub-Space of the Unit Segments $> N$, have also the unit meter of all spaces. [Figure 5]

1. The Space Layers : (or the Regular Solids) with sides equal to $AB = 0 \rightarrow \infty$ The Increasing Plane Spaces with the same Unit. (Figure 3)

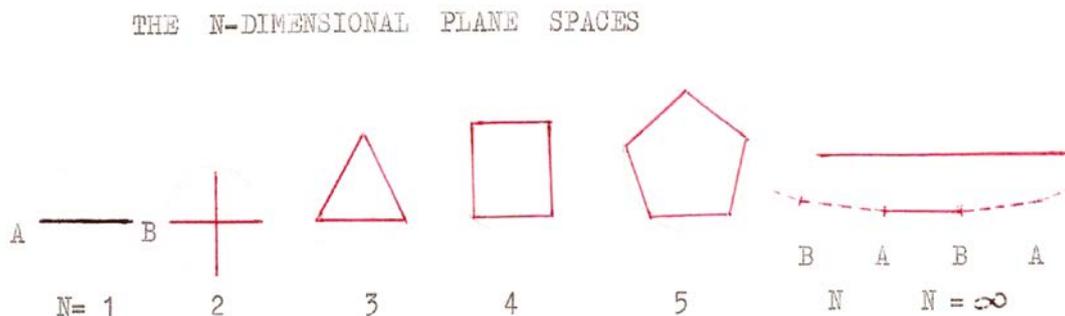


Figure 3.

2. The Sub-Space Layers : (or the Regular Solids on Spaces with the same Unit. (Figure 4)
 AB) as Roots of $AB = 0 \rightarrow \infty$ The Decreasing Plane

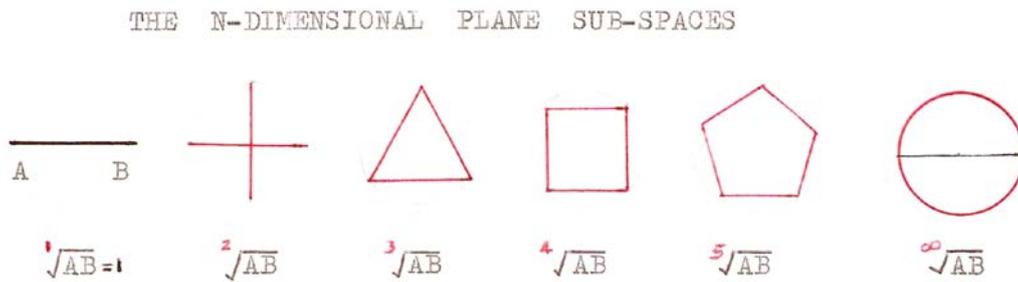


Figure 4.

3. The superposition of Plane Space Layers and Sub-Space Layers : (Figure 5) The simultaneously co-existence of Spaces and Sub-Spaces of any Unit $AB = 0 \rightarrow \infty$, i.e. Euclidean, Elliptic, Spherical, Parabolic, Hyperbolic, Geodesics, metric and non-metric geometries have Unit AB as common. The Interconnection of Homogeneous and Heterogeneous Spaces, and Subspaces of the Universe. [Figure 5]

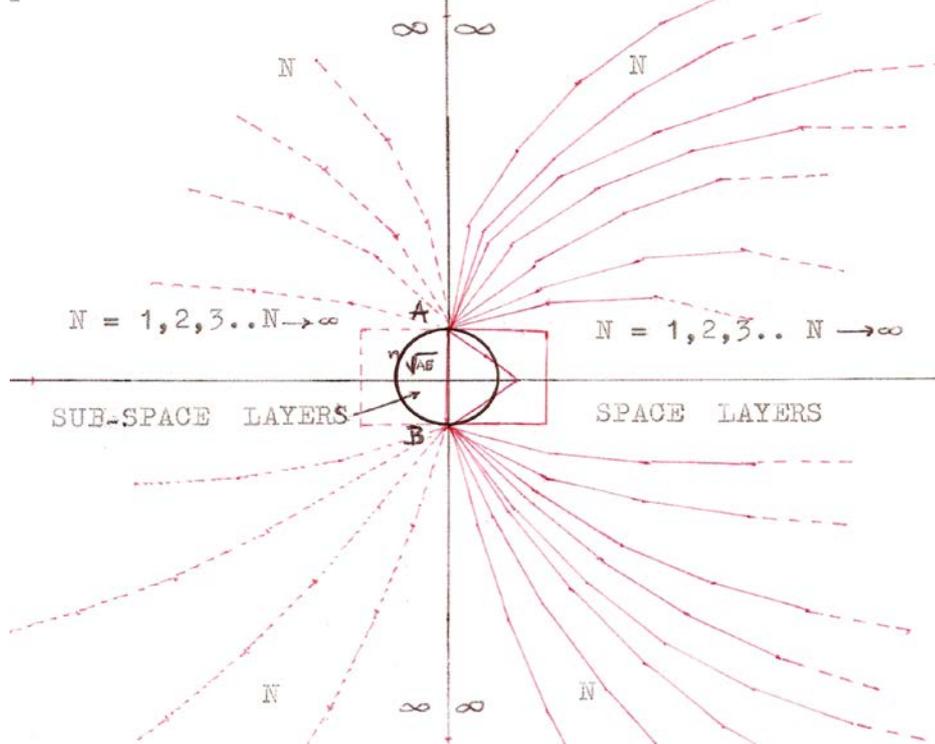


Figure 5.

4. A linear shape is the shape with N points on a Plane bounded with straight lines. A circle is the shape on a Plane with all points equally distance from a fix point O . A curved line is the shape on a Plane with points not equally distance from a fix point O . Curved shapes are those on a Plane bounded with curved lines. Rotating the above axial-centrifugally (machine $AB \perp AC$) is obtained Flat Space, Conics, Sphere, Curved Space, multi Curvature Spaces, Curved Hyperspace etc. The fact that curvature changes from point to point, is not a property of one Space only but that of the common area of more than two Spaces, namely the result of the Position of Points. Euclidean manifold (Point, sectors, lines, Planes, all Spaces etc) and the one dimensional Unit AB is proved to be the same thing (according to Euclid $\acute{\epsilon}\nu \pi\acute{\alpha}\nu$). [Figure 5]

Since Riemannian metric and curvature is on the great circles of a Sphere which consist a Plane, say AMA' ,

while the Parallel Postulate is consistent with three points only, therefore the great circles are not lines (this is because it is $MA + MA' > AA'$) and the curvature of Space is that of the circle in this Plane, i.e. that of the circle (O, OA), which are more than three points. Because Parallel Axiom is for three points only, which consist a Plane, then the curvature of < empty space > is equal to 0, (has not metric or intrinsic curvature).

The physical laws are correlated with the geometry of Spaces and can be seen, using CLG, in Plane Space as it is shown in figures F3 - F5. A marvelous Presentation of the method can be seen on Dr Geo-Machine Macro-constructions.

Perhaps, Inertia is the Property of a certain Space Layer, which is the conserved work as a field, and the Interaction of Spaces happening at the Commons (Horizon of Space, Anti-Space) or those have been called Concentrated Logic = Spin, and so create the motion. [21]

Hyperbolic geometry and straight lines :

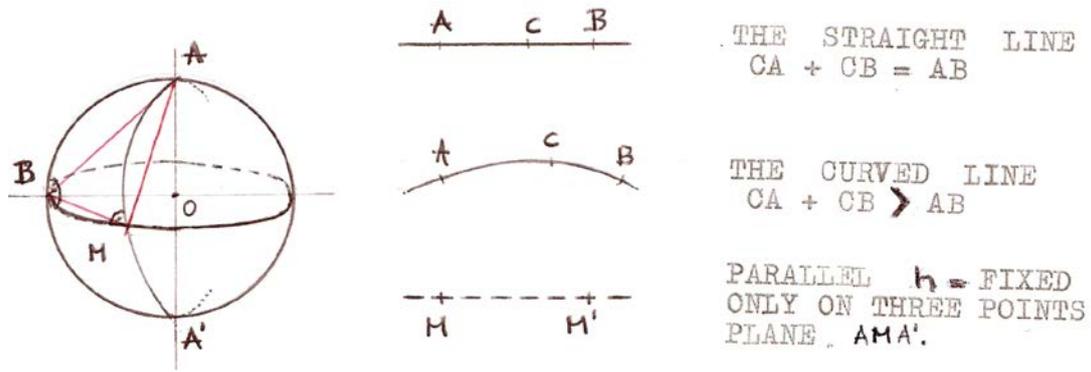


Figure 6.

The parallel axiom (the postulate) on any Segment AB in empty Space is experimentally verifiable, and in this way it is dependent of the other Axioms and is logically consistent, and since this is true then is accepted and so the Parallel Postulate as has been shown is a Parallel Axiom, so all Nature (the Universe) is working according to the Principles (the patterns), the Properties and the dialectic logic of the Euclidean geometry. [17]

Hyperbolic and Projective geometry transfers the Parallel Axiom to problem of a point M and a Plane AB-C instead of problem of three points only, a Plane, which such it is. (Figure 6)

Vast (the empty space) is simultaneously ∞ and 0 for every unit AB, as this is for numbers. Uniformity (Homogenous) of Empty Space creates, all the one dimensional units, the Laws of conservation for Total Impulse, and moment of Inertia in Mechanics, independently of the Position of Space and regardless the state of motion of other sources. (Isotropic Spaces) Uniformity (Homogenous) of Empty Time creates, the Laws of conservation of the Total Energy regardless of the state of motion (Time is not existing here, since Timing is always the same as zero) and Time Intervals are not existing. [17]

In Special Relativity events from the origin are determined by a velocity and a given unit of time, and the position of an observer is related with that velocity after the temporal unit.

Since all Spaces and Subspaces co-exist, then Past, Present and Future simultaneously exist on different Space Layer. Odd and Even Spaces have common and opposite Properties, (the regular Odd and Even regular Polygons on any dimensional Unit) so for Gravity belonging to different Layers as that of particles, is also valid in atom Layers. Euclidean geometry with straight lines is extended beyond Standard Model ($AB < 10^{-33}m$) from that of general relativity where Spaces may be simultaneously

Flat or Curved or multi-Curved, and according to the Concentrated, (Compact) Logic of the Space, are below Planck's length Level, so the changing curvature from point to point is possible in the different magnitudes of particles. In Planck length level and Standard Model, upper speed is that of light, while beyond Planck length a new type of light is needed to see what is happening.

5. Respective Figures

5.1. Rational Figured Numbers or Figures

This document is related to the definition of "Heron" that gnomon is as that which, when added to anything, a number or figure, makes the whole similar to that to which it is added. In general the successive gnomonic numbers for any polygonal number, say, of n sides have n-2 for their common difference. The odd numbers successively added were called gnomons. See Archimedes (Heiberg 1881, page 142,ε'). The Euclidean dialectic logic of an axiom is that which is true in itself.

τῶν δὲ ἀνίσων, ὁμοίων δὲ τὰ κέντρα τῶν βαρέων ὁμοίως ἐσσεῖται κείμενα. ὁμοίως δὲ λέγομεν σαμεία κείσθαι ποτὶ τὰ ὁμοία σχήματα. ἀφ' ὧν ἐπὶ τὰς ἰσας γωνίας ἀγόμενα εὐθεῖαι ποιεῖonti γωνίας ἰσας ποτὶ τὰς ὁμολόγους πλευράς. (Επιπέδων ἰσορροπιῶν ἢ κέντρα βαρῶν επιπέδων α').

This logic exists in nature (objective logic) and is reflected to our minds as dialectic logic of mind. Shortly for ancient Greeks was, (μηδὲν ἐν τῇ νοήσει ἐμῇ πρότερον ἐν τοῖ αἰσθήσοι). Since the first dimensional Unit is Segment AB, it is obvious that all Rational Segments are multiples of AB potentially the first polygonal number of any form, and the first is $2AB = AB + AB$, which shows that multiplication and Summation is the same action with the same common base, the Segment AB. To Prove :

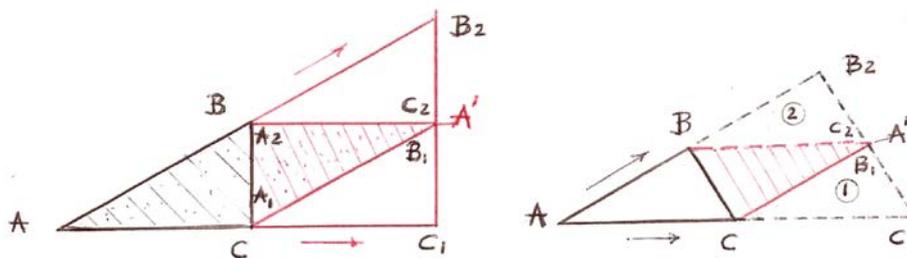


Figure 7.

The triangle with sides AC, AB, CB twice the length of initial segments AC, AB, CB preserves the same angles $\angle A = \angle BAC$, $\angle B = \angle ABC$, $\angle C = \angle ACB$ of the triangle.
 Proof :

- Remove triangle ABC on line AC such that point A coincides with point C (A1). Triangles CB1C1, ABC are equal, so $CA' = AB$, $C1A' = CB$
- Remove triangle ABC on line AB such that point A coincides with point B (A2). Triangles BB2C2, ABC are equal, so $BC2 = AC$, $B2C2 = BC$
- The two circles (C, $CB1 = AB$) and (B, $BC2 = AC$) determine by their intersection point A', so triangles CBA', CBA are equal, and also equal to the triangles CC1B1, BB2C2, and this proposition states that sides $CB1 = CA'$, $BC2 = BA'$. Point A' must simultaneously lie on circles (C1, C1 B1), (B2, B2C2), which is not possible unless point A' coincides with points B1 and C2.
- This logic exists in Mechanics as follows : The linear motion of a Figure or a Solid is equivalent to the linear motion of the gravity centre because all points of them are linearly displaced, so 1st Removal --- $BB1 = AC$, $CB1 = AB$, $BC = BC$ 2nd Removal --- $CC2 = AB$, $BC2 = AC$, $BC = BC$ 1st +2nd Removal -

--- $CB1 = AB$, $BC2 = AC$, $BC = BC$ which is the same .

Since all degrees of freedom of the System should not be satisfied therefore points B1, C2, A' coincide.

- Since circles (C1, $C1B1 = C1A' = CB$), (B2, $B2C2 = B2A' = CB$) pass through one point A', then C1A'B2 is a straight line, this because $C1A' + A'B2 = C1B2$, and A' is the midpoint of segment B2C1.
- By reasoning similar to what has just been given, it follows that the area of a triangle with sides twice the initials, is four times the area of the triangle.
- Since the sum of angles $\angle C1A'C + \angle CA'B + \angle BA'B2 = 180^\circ$ (6D) and equal to the sum of angles $\angle CBA + \angle CAB + \angle ACB$ then the Sum of angles of any triangle ABC is 180° , which is not depended on the Parallel theorem or else-where.

This proof is a self consistent logical system

Verification :

Let be the sides $a=5$, $b=4$, $c=3$ of a given triangle and from the known formulas of area $S = (a + b + c) / 2 = 6$, Area = $\sqrt{6 \cdot 1 \cdot 2 \cdot 3} = 6$ For $a=10$, $b=8$, $c=6$ then $S = 24/2 = 12$ and Area = $\sqrt{12 \cdot 2 \cdot 4 \cdot 6} = 24 = 4 \times 6$ (four times as it is).

5.2. A Given Point P and Any Circle (O, OA)

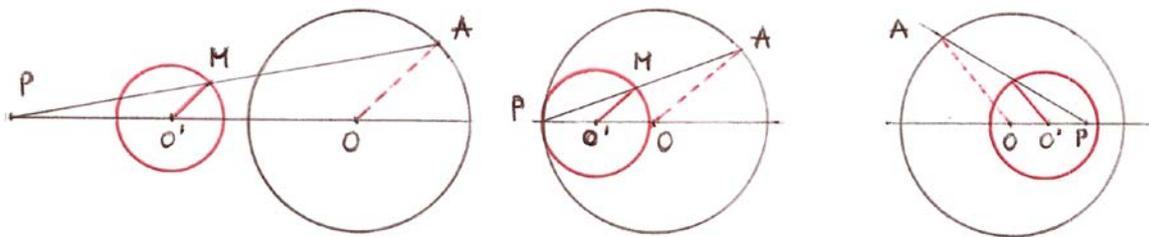


Figure 8.

- Point P is outside the circle.
- Point P on circle.
- Point P in circle.

To Prove:

The locus of midpoints M of segments PA, is a circle with center O' at the middle of PO and radius $O'M = OA/2$ where, P is any point on a Plane A is any point on circle (O, OA) M is mid point of segment PA, Proof :

Let O' and M be the midpoints of PO, PA. According to the previous given for Gnomon, the sides of triangle POA are twice the size of PO'M, or $PO = 2 \cdot PO'$ and $PA = 2 \cdot PM$ therefore as before, $OA = 2 \cdot O'M$, or $O'M = OA/2$.

Assuming M found, and Since O' is a fixed point, and O'M is constant, then (O', $O'M = OA/2$) is a circle. For

point P on the circle : The locus of the midpoint M of chord PA is the circle (O', $O'M = PO / 2$) and it follows that triangles OMP, OMA are equal which means that angle $\angle OMP = \angle OMA = 90^\circ$, i.e. the right angle $\angle PMO = 90^\circ$ and exists on diameter PO (on arc PO), and since the sum of the other two angles $\angle MPO + \angle MOP$ exist on the same arc $PO = PM + MO$, it follows that the sum of angles in a rectangle triangle is $90 + 90 = 180^\circ$

5.3. The Two Angles Problem

Any two angles $\alpha = \angle AOB$, $\beta = \angle A'O'B'$ with perpendicular sides are equal.

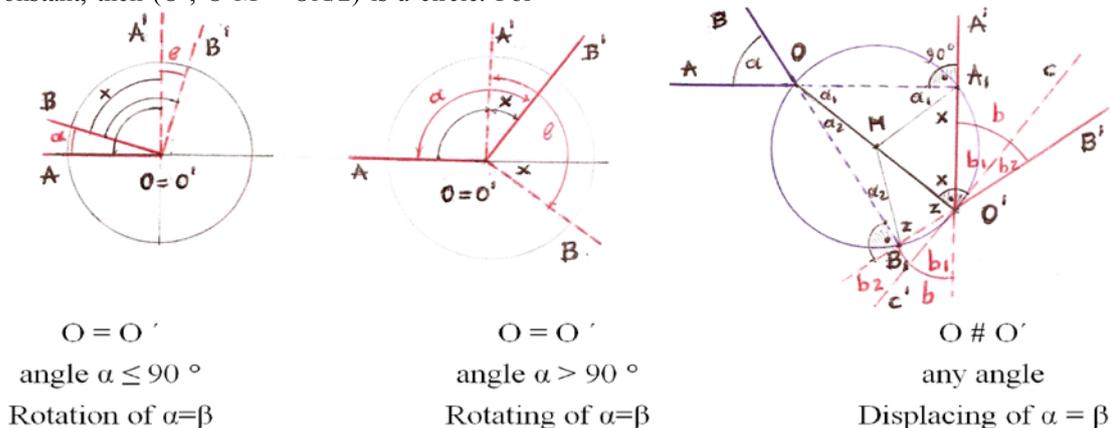


Figure 9.

Let $\angle AOB = a$ be any given angle and $\angle A'O'B' = b$ such that $AO \perp O'A'$, $OB \perp O'B'$.

To proof that angle b is equal to a .

Proof :

CENTRE $O' = O$, $\alpha < 90^\circ$

Angle $\angle AOA' = 90^\circ = \angle AOB + \angle BOA' = \alpha + x$ (1)

Angle $\angle BOB' = 90^\circ = \angle BOA' + \angle A'O'B' = x + \beta$ (2),

subtracting (1), (2) \rightarrow angle $\beta = \alpha$

CENTRE $O' = O$, $90^\circ < \alpha < 180^\circ$

Angle $\angle AOA' = 90^\circ = \angle AOB' - \angle B'OA' = \alpha - x$ (1)

Angle $\angle BOB' = 90^\circ = \angle A'OB - \angle A'OB' = \beta - x$ (2),

subtracting (1), (2) \rightarrow angle $\beta = \alpha$

CENTRE $O' \neq O$.

Draw circle (M, $MO = MO'$) with OO' as diameter intersecting $OA, O'B'$ produced to points A_1, B_1 .

Since the only perpendicular from point O to $O'A'$ and from point O' to OB is on circle (M, MO)

then, points A_1, B_1 are on the circle and angles $\angle O'A_1O, \angle O'B_1O$ are equal to 90° .

The vertically opposite angles $a = a_1 + a_2, b = b_1 + b_2$ where $O'C \perp OO'$.

Since $MO = MA_1$ then angle $\angle MOA_1 = \angle MA_1O = a_1$.

Since $MA_1 = MO'$ then angle $\angle MA_1O' = \angle MO'A_1 = x$

Since $MO' = MB_1$ then angle $\angle MO'B_1 = \angle MB_1O' = z$

Angle $\angle MO'C = 90^\circ = x + b_1 = z + b_2$.

Angle $\angle O'A_1O = 90^\circ = x + a_1 = x + b_1 \rightarrow a_1 = b_1$

Angle $\angle O'B_1O = 90^\circ = z + a_2 = z + b_2. \rightarrow a_2 = b_2$

By summation $a_1 + a_2 = b_1 + b_2$ or $b = a$ (o.e.d)

i.e. any two angles a, b having their sides perpendicular among them are equal.

From upper proof is easy to derive the Parallel axiom, and more easy from the Sum of angles on a right-angled triangle .

5.4. Any Two Angles Having their Sides Perpendicular among them are Equal or Supplementary .[Figure 10]

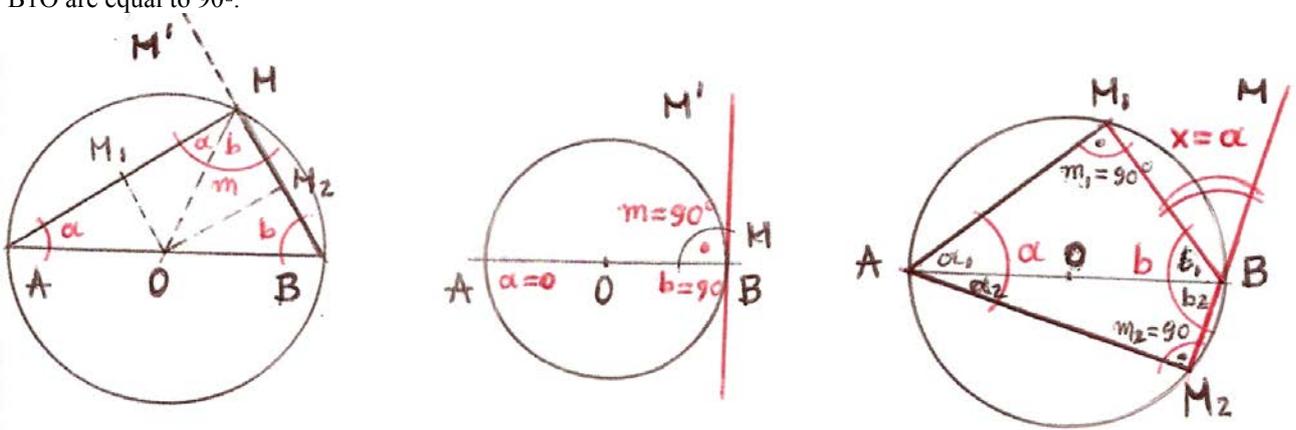


Figure 10.

$AB = \text{Diameter } M \rightarrow B, AB \perp BM'$ $AM_1 \perp BM_1, AM_2 \perp BM_2 = AM_2 \perp BM$

Let angle $\angle M_1AM_2 = a$ and angle $\angle M_1BM_2 = b$, which have side $AM_1 \perp BM_1$ and side $AM_2 \perp BM_2 \perp BM$

Show :

1. Angle $\angle M_1AM_2 = \angle M_1BM_2 = a$
2. Angle $\angle M_1AM_2 + \angle M_1BM_2 = a + b = 180^\circ$.
3. The Sum of angles in Quadrilateral AM_1BM_2 is 360° .
4. The Sum of angles in Any triangle AM_1M_2 is 180° .

Proof :

1. In figure 10.3, since $AM_1 \perp BM_1$ and $AM_2 \perp BM_2$ or the same $AM_2 \perp BM$, then according to prior proof, AB is the diameter of the circle passing through points M_1, M_2 , and exists $a_1 + b_1 = m_1 = 90^\circ, a_2 + b_2 = m_2 = 90^\circ$ and by summation $(a_1 + b_1) + (a_2 + b_2) = 180^\circ$ or $(a_1 + a_2) + (b_1 + b_2) = a + b = 180^\circ$, and since also $x + b = 180^\circ$ therefore angle $\angle x = a$

2. Since the Sum of angles $\angle M_1BM_2 + \angle M_1BM = 180^\circ$ then $a + b = 180^\circ$

3. The sum of angles in quadrilateral AM_1BM_2 is $a + b + 90 + 90 = 180 + 180 = 360^\circ$

4. Since any diameter AB in Quadrilateral divides this in two triangles, it is very easy to show that diamesus

M_1M_2 form triangles AM_1M_2, BM_1M_2 equal to 180° each.

so,

1. Any angle between the diameter AB of a circle is right angle (90°).
2. Two angles with vertices the points A, B of a diameter AB , have perpendicular sides
3. and are equal or supplementary.
4. Equal angles exist on equal arcs, and central angles are twice the inscribed angles.
5. The Sum of angles of any triangle is equal to two right angles.

i.e two Opposite angles having their sides perpendicular between them, are Equal or Supplementary between them.

This property has been used in proofs of Parallel Postulate and is also a key to many others .[20]

Many theorems in classical geometry are easily proved by this simple logic.

Conclutions , and how useful is this invention is left to the reader.

5.4.1. A Point M on a Circle of any Diameter, $AB = 0 \rightarrow \infty$

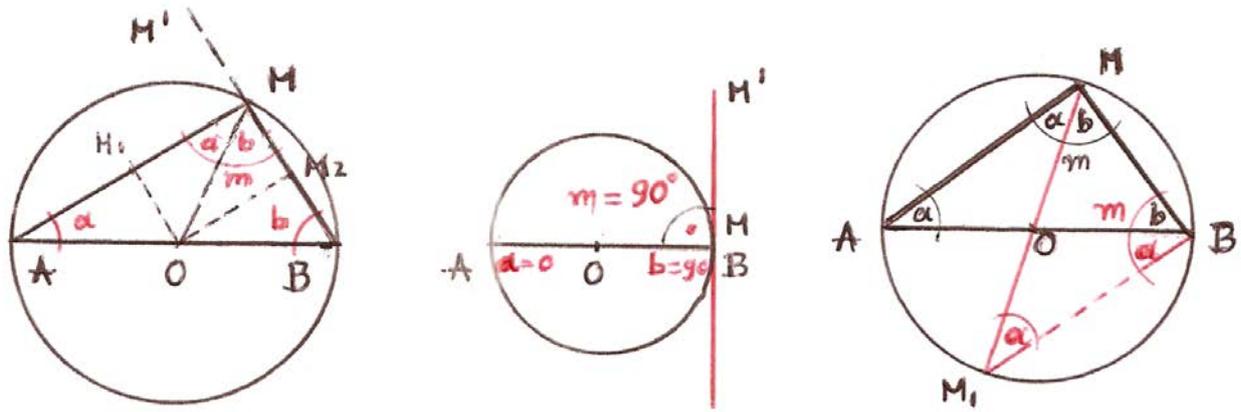


Figure 11.

$AB = \text{Diameter } M \rightarrow B, AB \perp BM', \Delta [AMB = MBM1]$

Let M be any point on circle ($O, OM = OA = OB$), and $M1, M2$ the middle points of MA, MB and in second figure $MM' \perp BA$ at point B (angle $AMM' = 90^\circ$).

In third figure $MM1$ is a diameter of the circle .

Show :

1. Angle $\angle AMB = \angle MAB + \angle MBA = a + b = m$
2. Triangles $MBM1, MBA$ are always equal and angle $\angle MBM1 = \angle AMB = 90^\circ$
3. The Sum of angles on triangle MAB are $\angle AMB + \angle MAB + \angle MBA = 180^\circ$.

Proof:

1. Since $OA = OM$ and $M1A = M1M$ and $OM1$ common, then triangles $OM1A, OM1M$ are equal and angle $\angle OAM = \angle OMA = \angle BAM = a \rightarrow (a)$ Since $OM = OB$ and $M2B = M2M$ and $OM2$ common, then triangles $OM2B, OM2M$ are equal and angle $\angle OBM = \angle OMB = \angle ABM = b \rightarrow (b)$ By summation (a), (b) $\angle BAM + \angle ABM = (\angle OMA + \angle OMB) = \angle AMB = a + b = m$. (c) i.e. When a Point M lies on the circle of diameter AB , then the sum of the two angles at points A, B is constantly equal to the other angle at M . Concentrated logic of geometry exists at point B , because as on segment AB of a straight line AB , which is the one dimensional Space, springs the law of Equality, the equation $AB = OA + OB$ i.e. The whole is equal to the parts, so the same is valid for angles of all points on the circumference of the circle (O, OM), [as Plane ABM and all angles there exist in the two dimensional Space], and it is $m = a + b$. In figure (11), when point M approaches to B , the Side BM' of angle $\angle ABM$ tends to the perpendicular on BA and when point M coincides with point B , then angle $\angle ABM = 90^\circ$ and $\angle OAM = \angle BAM = 0$, therefore angle $\angle AMB = 90^\circ$ and equation (c) becomes : $\angle BAM + \angle ABM = \angle AMB \rightarrow 0 + 90^\circ = \angle AMB \rightarrow \angle AMB = 90^\circ$, (i.e. $AM \perp BM$) and the sum of angles is $(\angle BAM + \angle ABM) + \angle AMB = 90^\circ + 90^\circ = 180^\circ$, or $\angle BAM + \angle ABM + \angle AMB = 180^\circ$

2. Triangles $MBA, MBM1$ are equal because they have diameter $MM1 = AB, MB$ common and angle $\angle OBM = \angle OMB = b$ (from isosceles triangle OMB). Since Triangles $MBA, MBM1$ are equal therefore angle $\angle MM1B = \angle MAB = a$, and from the isosceles triangle $OM1B$, angle $\angle OBM1 = \angle OM1B = a$ The angle at point B is equal to $\angle MBM1 = \angle MBA + \angle ABM$

$1 = b + a = m = \angle AMB$. Rotating diameter $MM1$ through centre O so that points $M, M1$ coincides with B, A then angle $\angle MBM1 = \angle MBA + \angle ABM1 = \angle BBA + \angle ABA = 90^\circ + 0 = 90^\circ$ and equal to $\angle AMB$ i.e. The required connection for angle $\angle MBM1 = \angle AMB = m = a + b = 90^\circ$. (o.e.d)

3. Since the Sum of angles $a + b = 90^\circ$, and also $m = 90^\circ$ then $a + b + m = 90^\circ + 90^\circ = 180^\circ$. It is needed to show that angle m is always constant and equal to 90° for all points on the circle. Since angle at point B is always equal to $\angle MBM1 = \angle MBO + \angle OBM1 = b + a = m = \angle AMB$, by Rotating triangle $MBM1$ so that points M, B coincide then $\angle MBM1 = \angle BBA + \angle ABA = 90^\circ + 0 = m$ Since angle $\angle AMB = a + b = m$ and is always equal to angle $\angle MBM1$, of the rotating unaltered triangle $MBM1$, and since at point B angle $\angle MBM1$ of the rotating triangle $MBM1$ is 90° , then is always valid, angle $\angle AMB = \angle MBM1 = 90^\circ$ (o.e.d),

2a. To show , the Sum of angles $a + b = \text{constant} = 90^\circ = m$.

M is any point on the circle and $MM1$ is the diameter. Triangles $MBA, MBM1$ are equal and by rotating diameter $MM1$ through centre O , the triangles remain equal.

Proof :

- a. Triangles $MBA, MBM1$ are equal because they have $MM1 = AB, MB$ common and angle $\angle OBM = \angle OMB = b$ (from isosceles triangle OMB) so $MA = BM1$.
- b. Since Triangles $MBA, MBM1$ are equal therefore angle $\angle MM1B = \angle MAB = a$, and from isosceles triangle $OM1B$, angle $\angle OBM1 = \angle OM1B = a$
- c. The angle at point B is always equal to $\angle MBM1 = \angle MBO + \angle OBM1 = b + a = m = \angle AMB$ Rotating triangle $MBM1$ so that points M, B coincide then $\angle MBM1 = \angle BBA + \angle ABA = 90^\circ + 0 = m$.Since angle $\angle AMB = a + b = m$ and is equal to angle $\angle MBM1$, of the rotating unaltered triangle $MBM1$ and which at point B has angle $m = 90^\circ$, then is valid angle $\angle AMB = \angle MBM1 = 90^\circ$ i.e. the required connection for angle $\angle AMB = m = a + b = 90^\circ$. (o.e.d), 22/4/2010.

2b. When point M moves on the circle, Euclidean logic is as follows:

Accepting angle $\angle ABM' = b$ at point B , automatically point M is on the straight line BM' and the equation at point B is for $(a = 0, b = 90^\circ, m = 90^\circ) \rightarrow 0 + 90^\circ = m$ and also equal to, $0 + b - b + 90^\circ = m$ or the same $\rightarrow b + (90^\circ - b) = m \dots \dots (B)$

In order that point M be on the circle of diameter AB, is necessary $\rightarrow m = b + a \dots (M)$, where a, b is an angle such that straight line AM (the direction AM) cuts BM', and is $b + (90^\circ - b) = m = b + a$ or $\rightarrow 90^\circ - b = a$ and $\rightarrow a + b = 90^\circ = \text{constant}$, i.e. the demand that the two angles a, b , satisfy equation (M) is that their sum must be constant and equal to 90° . (o.e.δ)

3. In figure 3, according to prior proof, triangles MBA, MBM1 are equal. Triangles AM1B, AMB are equal because AB is common, MA = BM1 and angle $\angle MAB = \angle MBM1$, so $AM1 = MB$.

Triangles ABM1, ABM are equal because AB is common MB = AM1 and AM = BM1, therefore angle $\angle BAM1 = \angle ABM = b$ and so, angle $\angle MAM1 = a + b = \angle MBM1$

Since angle $\angle AMB = \angle AM1B = 90^\circ$ then $AM \perp BM$ and $AM1 \perp BM1$.

Triangles OAM1, OBM are equal because side OA = OB, OM = OM1 and angle $\angle MOB = \angle AOM1$, therefore segment $M1A = MB$.

Rotating diameter MM1 through O to a new position Mx, M1x any new segment is

$MxB = M1xA$ and the angle $\angle MxBM1x = \angle MxBA + \angle ABM1x$ and segment $BMx = AM1x$.

Simultaneously rotating triangle MxBM1x through B such that $BMx \perp AB$ then angle $\angle MxBM1x = \angle BBA + \angle ABA = 90^\circ + 0 = 90^\circ$, i.e. in any position Mx of point M angle $\angle AMxB = \angle MxBM1x = 90^\circ$, i.e. two Equal or Supplementary between them opposite angles, have their sides perpendicular between them. (the opposite to that proved)

Followings the proofs, then any angle between the diameter of a circle is right angle (90°), central angles are twice the inscribed angles, angles in the same segments are equal to one another and then applying this logic on the circumscribed circle of any triangle ABM, then is proved that the Sum of angles of any triangle is equal to two right angles or $\angle BAM + \angle ABM + \angle AMB = 180^\circ$

5.4.2. A Point M on a Circle of any Diameter, $AB = 0 \rightarrow \infty$

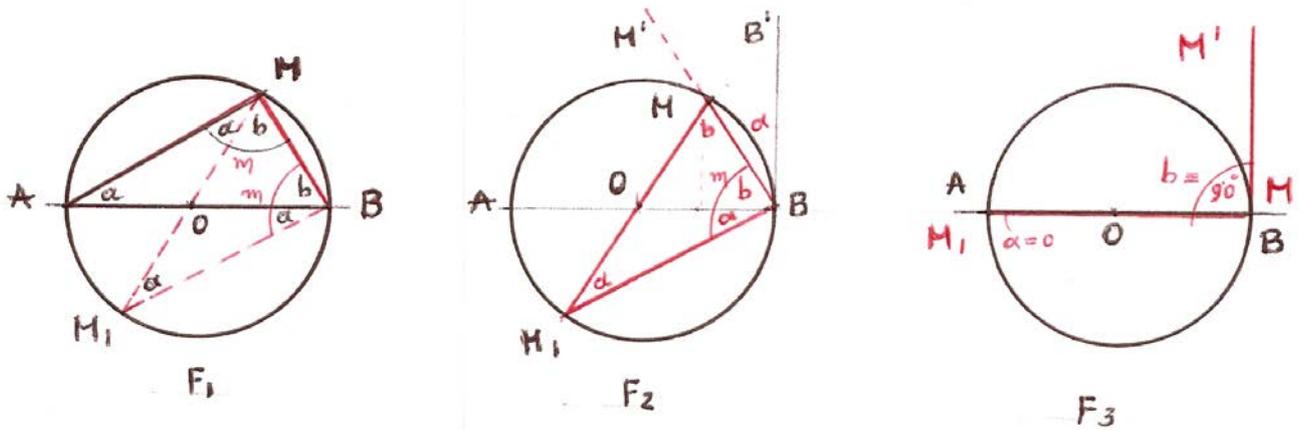


Figure 12.

To show that angle $\angle AMB = m = 90^\circ$
 $BB' \perp BA$ (angle $\angle ABB' = 90^\circ$), $MM'' \perp AB$

F1 : It has been proved that triangles AMB, MBM1 are equal and angle $\angle AMB = \angle MBM1 = m$ for all positions of M on the circle. Since triangles OMB, OAM1 are equal then chord $BM = AM1$ and arc $BM = AM1$.

F2 : The rotation of diameter MM1 through centre O is equivalent to the new position Mx of point M and simultaneously is the rotation of angle $\angle M'BM1 = \angle M'BM1x$ through point B, and this because arc $BM = AM1$, $BMx = AM1x$, i.e. when point M moves with BMM' to a new position Mx on the circle, diameter $MOM1 = MxOM1x$ is rotated through O, the points M, M1 are sliding on sides BMM', BM1 because point M1 to the new position M1x is such that $AM1x = BMx$ and angle $\angle M'BM1$ is then rotated through B. (analytically as below)

F3 : When diameter MM1 is rotated through O, point M lies on arc $MB = AM1$ and angle $\angle M'BM1$ is not altered (this again because $MB = AM1$) and when point M is at B, point M1 is at point A, because again arc $BM = AM1 = 0$, and angle $a = \angle BM1M = 0$, or angle $\angle M1BM = \angle M1BM' = \angle ABM' = 90^\circ = m = a + b$

Conclusion 1.

Since angle $\angle AMB$ is always equal to $\angle MBM1 = \angle M'BM1$ and angle $\angle M'BM1 = 90^\circ$ therefore angle $\angle AMB = a + b = m = 90^\circ$

Conclusion 2.

Since angle $\angle ABB' = 90^\circ = \angle ABM + \angle MBB' = b + a$, therefore angle $\angle MBB' = a$, i.e. the two angles $\angle BAM, \angle MBB'$ which have $AM \perp BM$ and also $AB \perp BB'$ are equal between them.

Conclusion 3.

Any angle $\angle MBB'$ on chord BM and tangent BB' of the circle (O, OA = OB), where is holding ($BB' \perp BA$), is equal to the inscribed one, on chord BM.

Conclusion 4.

Drawing the perpendicular MM'' on AB, then angle $\angle BMM'' = \angle MAB = \angle MBB'$, because they have their sides perpendicular between them, i.e. since the two lines BB', MM'' are parallel and are cut by the transversal MB then the alternate interior angles $\angle MBB', \angle BMM''$ are equal.

Conclusion 5.

In Mechanics, the motion of point M is equivalent to, a curved one on the circle, two Rotations through points O, B, and one rectilinear in the orthogonal system $M'BM1 = MBM1$.

5.4.3. A Point M on a Circle of any Diameter, $AB = 0 \rightarrow \infty$

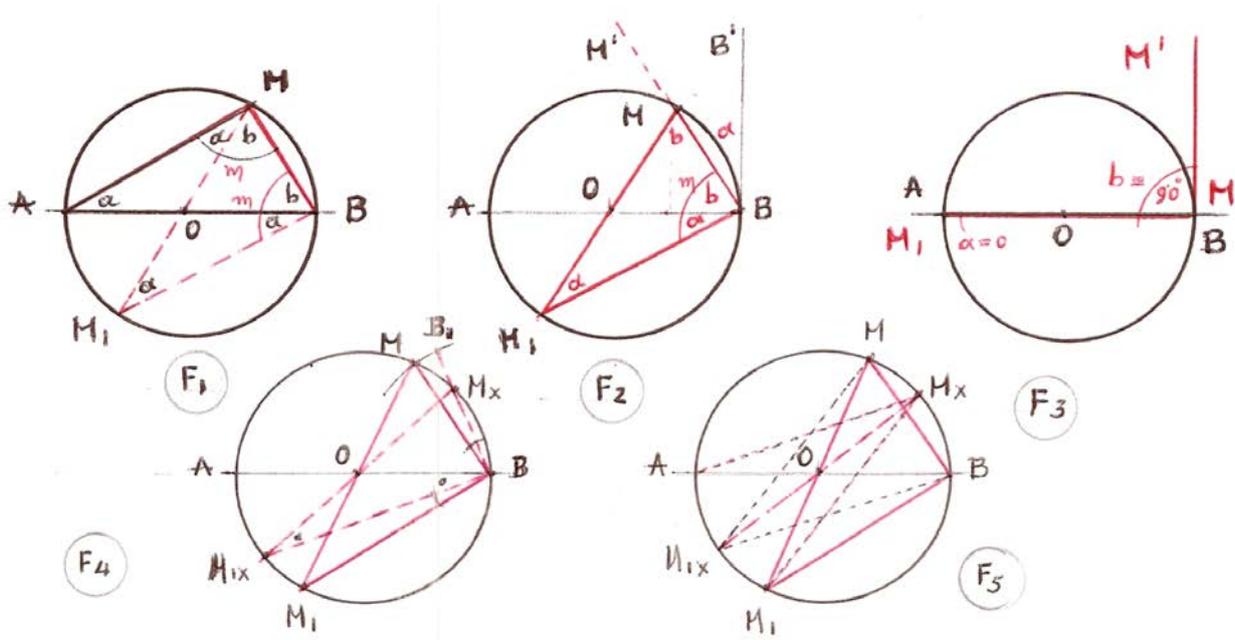


Figure 13.

Show that angle MBM1 is unaltered when plane MBM1 is rotated through B to a new position MxBM1x

Let Plane (MBM1), (F13) be rotated through B, to a new position B1BM1x such that :

1. Line BM → BB1 intersects circle (O,OB) at point Mx and the circle (B,BM = BB1), at point B1.
2. Line BM1 → BM1x extended intersects circle (O,OB) at the new point M1x.
3. Angle < M1BM1x = MBB1 = MBMx, is angle of rotation.

Proof :

Since angle < M1BM1x = MBMx, therefore angle < M1BM is unaltered by rotation →

i.e. Angle < M1BM = M1xBMx and diameter MM1 is sliding uniformly on their sides.

Data + Remarks.

1. Diameter MM1 is sliding in angle M1BM which means that points M1, M lie on the circle (O,OB) and on lines BM1, BM respectively, and also sliding to the other sides BM1x, BMx of the equal angle < M1xBMx. Any line segment M1xMw = MM1 is also diameter of the circle.
2. Only point Mx is simultaneously on circle (O,OB) and on line BB1.
3. The circle with point M1x as centre and radius M1xMw = MM1 intersect circle (O, OB) at only one unique point Mw.
4. Since angle < M1xBB1 = M1BM and since segment M1xMw = MM1 then chord M1xMw must be also on sides of angles M1xBB1, M1BM, i.e. Point Mw must be on line BB1
5. Ascertain 2 and 4 contradict because this property belongs to point Mx, unless this unique point Mw coincides with Mx and chord MxM1x is diameter of circle (O,OB).

Point Mx is simultaneously on circle (O, OB), on angle < M1xBB1 = M1xBMx and is sliding on line BB1. We know also that the unique point Mw has the same properties as point Mx, i.e. point Mw must be also on circle (O, OB) and on line BB1, and the diameter M1xMw

is sliding also on sides of the equal angles M1xBB1, M1xBMx, M1BM.

Since point Mw is always a unique point on circle (O,OB) and also sliding on sides of angle M1BM = M1xBMx and since point Mx is common to circle (O,OB) and to line BB1 = BMx, therefore, points Mw, Mx coincide and chord MxM1x is diameter on the circle (O,OB), i.e. The Rotation of diameter MM1 through O, to a new position MxM1x, is equivalent to the Rotation of Plane (MBM1) through B and exists angle < MBM1 = MxBM1x, so angle < MBM1 = MxBM1x = AMB = 90° = m = a + b o.e.δ

Since angle < MBMx = M1BM1x is the angle of rotation, and since also arc MMx = M1M1x (this because triangles OMMx, OM1M1x are equal) then : Equal inscribed angles exist on equal arcs.

6. General Remarks

6.1. Axiom not Satisfied by Hyperbolic or other Geometry.

It has been proved that quadrilateral MA1CC' is Rectangle (F1.d) and from equality of triangles MA1C, MC'C then angle < C'MC = MCA1. Since the sum of angles < MCA1 + MCB = 180°, also, the sum of angles < C'MC + MCB = 180° which answers to Postulate P5, as this has been set (F1.e). Hyperbolic geometry, Lobachevski, non-Euclidean geometry, in Wikipedia the free encyclopedia, states that there are TWO or more lines parallel to a given line AB through a given point M not on AB. If this is true, for second angle C2MC, exists also the sum of angles < C2MC + MCB = 180°, which is Identity (C2MC = C'MC), i.e. all (the called parallels) lines coincide with the only one parallel line MM', and so again the right is to Euclid geometry. Definitions, Axioms or Postulates create a geometry, but in order this geometry to be right must follow the logic of Nature, the objective reality, which is the meter of all logics, and has been found to be the first dimensional Unit AB = 0 → ∞ (F.2.2)

i.e. the reflected Model of the Universe. Lobachevski's and Riemann's Postulate may seem to be good attempts to prove Euclid's Fifth Postulate by contradiction, and recently by "compromising the opposites" "in the Smarandache geometries. None of them contradicts any of the other Postulates of what actually are or mean. From any point M on a straight line AB, springs the logic of the equation (the whole AB is equal to the parts MA, MB as well as from two points passes only one line –theorem–), which is rightly followed (intrinsically) in Euclidean geometry only, in contradiction to the others which are based on a confused and muddled false notion (the great circle or segment is line, disk as planes and others), so all non-Euclidean geometries contradict to the second definition (D2) and to the first Euclidean Postulate (P 1).

6.2. Hyperbolic Geometry Satisfies the Same 4 Axioms as Euclidean Geometry, and the Error if any in Euclidean Derivation of the 5th Axiom

An analytical trial is done to answer this question.

Postulate 1 : States that "Let it have been postulated to draw a straight-line from any point to any point". As this can be done by placing the Ruler on any point A to any point B, then this is not in doubt by any geometry. The word "line" in Euclid geometry is straight line (the whole is equal to the parts, where lines on parts coincide) and axioms require that line to be as this is (Black color is Black and White color is White). In ancient Greek < Ευθεία γραμμή ἔστιν, ἥτις ἐξ' ἴσου τοῖς εαυτῆς σημείοις κείται. >

Postulate 2 : states that, " And to produce a finite straight-line " Marking points A, B which are a line segment AB, and by using a Ruler then can produce AB in both sides continuously, not in doubt by any geometry.

Postulate 3 : states that, " And to draw a circle with any centre and radius " Placing the sting of a Compass at any point A (centre) and the edge of pencil at position B and (as in definition 15 for the circle) Radiating all equal straight lines AB, is then obtained the figure of the circle (the circumference and the inside), not in doubt by any geometry.

Postulate 4 : states that, " And all right angles are equal to one another " In definition D8 is referred as Plane Angle, to be the inclination of two lines in a plane meeting one another, and are not laid down straight-on with respect to one another, i.e. the angle at one part of a straight line. In definition D9 is stated " And when the lines containing the angle are straight then the angle is called rectilinear " and this because straight lines divide the plane, and as plane by definition is 360° then the angles on a straight line are equal to 180° In definition D10 is stated that a perpendicular straight line stood upon (another) straight-line makes adjacent angles (which are) equal to one another, each of the equal angles is a right-angle and this because as the two adjacent angles are equal and since their sum is 180° , then the two right-angles are 90° each and since this happens to any two perpendicular straight-lines, then all right angles are equal to one another, not in doubt by any geometry.

Postulate 5 : This postulate is referred to the Sum of the two internal angles on the same side of a straight-line falling across two (other) straight lines, being produced to

infinity, and be equal to 180° . Because this postulate, beside all attempts to prove it, was standing for centuries, mathematicians created new geometries to step aside this obstruction. In my proposed article the followings have been geometrically proved :

From any point M to any line AB (the three points consist a Plane) is constructed by using the prior four Postulates, a system of three rectangles MA1CC', C'CB1M', MA1B1M'.(2.d)

The Sum of angles C'MC and MCB is $\angle C'MC + \angle MCB = 180^\circ$, which satisfies postulate P5 of Euclid geometry, and as this is now proved, then it is an axiom.

The extended Structure of Euclidean-geometry to all Spaces (Spaces and Sub-spaces) resettles truth to this geometry, and by the proposed solution which is applicable to any point M, not on line AB, answers to the temporary settled age-old question for this problem.

Mathematical interpretation and all relative Philosophical reflections based on the non-Euclid geometry theories must be properly revised and resettled in the truth one.

6.3. The Sum of Angles on any Triangle is 180°

Since the two dimensional Spaces exists on Space and Subspace (Figure 5) then this problem of angles must be on the boundaries of the two Spaces i.e. on the circumference of the circle and on any tangent of the circle and also to that point where Concentrated Logic of geometry exists for all units, as straight lines etc. It was proved at first that, the triangle with hypotenuse the diameter of the circle is a right angled triangle and then the triangle of the Plane of the three vertices and that of the closed area of the circle (the Subspace), measured on the circumference is 180° .

6.4. Angles with Perpendicular Sides are Equal or Supplementary

In Proofed Succession (5.4), is referred that two angles with perpendicular sides are equal (or supplementary). To avoid any pretext, a clear proof is given to this presupposition showing that,

Any angle between the diameter AB of a circle is right angle (90°).

Any two angles with vertices the points A, B of a diameter AB, have perpendicular sides and are also equal or supplementary.

Equal angles exist on equal arcs, and central angles are twice the inscribed angles.

The Sum of angles of any triangle is equal to two right angles.

So,

There is not any error in argument of proofs.

The 5th Postulate is Depended on (derived from) the prior four axioms.

7. Criticism to Non-Euclid Geometries

The essential difference between Euclidean and non-Euclidean geometries is the nature of parallel lines.

Euclid's fifth postulate, the parallel postulate, states that, within a two-dimensional plane ABM for a given line AB

and a point M, which is not on AB, i.e. $MA+MB > AB$, there is exactly one line through M that does not intersect AB because if $MA+MB = AB$ then point M is on line AB and then lines MA, MB coincide each one passing from two points only and thus is answered the why any line contains at least two points. In Euclid geometry, in case of two straight lines that are both perpendicular to a third line, the lines remain at a constant distance from each other and are known as parallels. Now is proved that, a point M on the Nth Space, of any first dimensional Unit $AB = 0 \rightarrow \infty$, jointly exists, with all Sub-Spaces of higher than N Spaces, and with all Spaces of lower than N Subspaces. This is the Structure of Euclidean geometry. [Figure 5] As in fundamental theorem of Algebra Equations of Nth degree can be reduced to all N-a or N+a degree, by using the roots of the equations, in the same way Multi-Spaces are formed on AB. Nano-scale-Spaces, inorganic and organic, Cosmic-scale-Spaces are now unified in our world scale. Euclidean Empty Space is Homogeneously Continues, but all first dimensional Unit-Spaces Heterogeneous and this because all Spaces constitute another Unit (the Nth Space Tensor is the boundaries of N points). All above referred and many others are springing from the first acceptance for point, and the approaching of Points. By multiplication is created another one very important logical notion for the laws concerning Continues or not Continues Transformations in Space and in Time for Mechanics, Physics Chemistry and motions generally. From this logic yields that a limited and not an unlimited Universe can Spring anywhere.. Since Non-existence is found everywhere then Existence is found and is Done everywhere. (3.1) If Universe follows Euclidean geometry, then this is not expanded indefinitely at escape velocity, but is moving in Changeable Spaces with all types of motions, < a twin symmetrically axial -centrifugal rotation > into a Steady Space (The System

$AB \perp AB = 0 \rightarrow AB \rightarrow \infty$), with all types of curvatures. (It is a Moving and Changeable Universe into a Steady Formation) [7]. It was proved that on every point in Euclid Spaces exist infinite Impulse $P = 0 \rightarrow P \rightarrow \infty$, and so is growing the idea that Matter was never concentrated at a point and also Energy was never high < very high energy > [17], i.e. Bing Bang has never been existed, but a Space conservation Energy State $\rightarrow W = [A-B [P.ds] = 0$. Gravity is particle also, in Space-Energy level, with wave length smaller than that of light and thus can enter wave length of light. An extend analysis in [21].

Hyperbolic geometry, by contrast, states that there are infinitely many lines through M, not intersecting AB In Hyperbolic geometry, the two lines “curve away” from each other, increasing in distance as one moves further from the points of intersection with the common perpendicular, which have been called ultra-parallel. The simplest model for Hyperbolic geometry is the pseudo-sphere of Beltrami-Klein, which is a portion of the appropriate curvature of Hyperbolic Space, and the Klein model, by contrast, calls a segment as line and the disk as Plane.??? In hyperbolic geometry the three angles of a triangle add less than 180° , without referring that triangle is not in Plane but on Sphere < Spherical triangle F2(1) > This omission created the wrong hyperbolic geometry. Mobius strip and Klein bottle (complete one-sided objects of three and four dimensions) transfers the parallel Postulate to a problem of one point M and a Plane,

because all curves and other curve lines are not lines (For any point on a straight line exists < the whole is equal to the parts which is an equality > and not the inequality of the three points) because contradict to the three points only and anywhere. If our Universe follows Hyperbolic geometry then this is expanded indefinitely, which contradicts to the homogenous and isotropic Empty Spaces and also to the laws of conservation of Energy. This guides to a concentrated at a point matter and Energy < very high energy >, Bing Bang event.

Elliptic geometry, by contrast, states that, all lines through point M, intersect AB. In Elliptic geometry the two lines “curve toward” each other and eventually intersect. The simplest model for Elliptic geometry is a sphere, where lines are “great circles”??? For any great circle (which is not a straight line ???) and a point M which is not on the circle all circles (not lines ???) through point M will intersect the circle. In elliptic geometry the three angles of a triangle add greater than 180° , without referring that triangle is not in Plane, but in the Sphere, < in Spherical triangle F2(3) >. This omission created the wrong elliptic geometry. If Universe follows Elliptic geometry then this is expanded to a halt and then this will stark to shrink possibly not to explode as is said, but to change the axial-centrifugal motion to the initial Rectilinear.

8. Conclusions

A line is not a great circle, so anything is built on this logic is a mislead false.

The fact that the sum of angles on any triangle is 180° is springing for the first time, in this article (Rational Figures).

This admission of two or more than two parallel lines, instead of one of Euclid’s, does not proof the truth of the admission. The same to Euclid’s until the present proved method.

The proposed Method in this article, based on the prior four axioms only, proofs, (not using any admission) that, through point M on any Plane ABM (three points only which consist the Plane), passes only one line of which all points equidistant from AB, as point M, i.e. the right is to Euclid Geometry.

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