Parallel Transforming Percentage (PTP) Theorem - Claim

Henry V. Pham

The purpose of the '**Parallel Transforming Percentage (PTP) Theorem**' Mathematics invention is introduced to calculate and solve some mysteries of geometry problems and help to build magnified objects or products easier in 2D or 3D parallel transforming geometry for lines, shapes and objects which would be powerful for computer software designs and simulations to build complex mechanical systems. The PTP Theorem could be treated as the Numbers Theory within 0 and 1 for 0% and 100%. There are 3 types of transforming geometry; line parallel transforming, surface area parallel transforming and object zoomification transforming. These parallel transforming can be used to calculate new or hidden sides, area and volume faster relatively to the original one, and can also be used to pin point the surface center and object center. The PTP Theorem would provide the geometry transformation in percentage to solve the mystery of ellipse which currently has incorrect ellipse definition with two focuses and incorrect ellipse radius formula. The PTP Theorem would also provide new way to calculate irregular pyramid, irregular cone shapes based on its regular shape with the base can be transformed within the Ellipse curve, and the cone can be used to cover other 3D shapes to calculate. There are 9 Theorems totally in this Mathematics Invention with one supports another and applying the PTP Theorem to calculate Mass Center Point, Mass Center Line, Object Center. This invention claim shows the overview figure of this invention which was submitted on 2023/10/23 with U.S. PCT/US23/77507 and International PCT/IB2023/000611 Patent Numbers, which can be used as the representing invention drawing to print on the patent frame and the following functions and features of this invention.

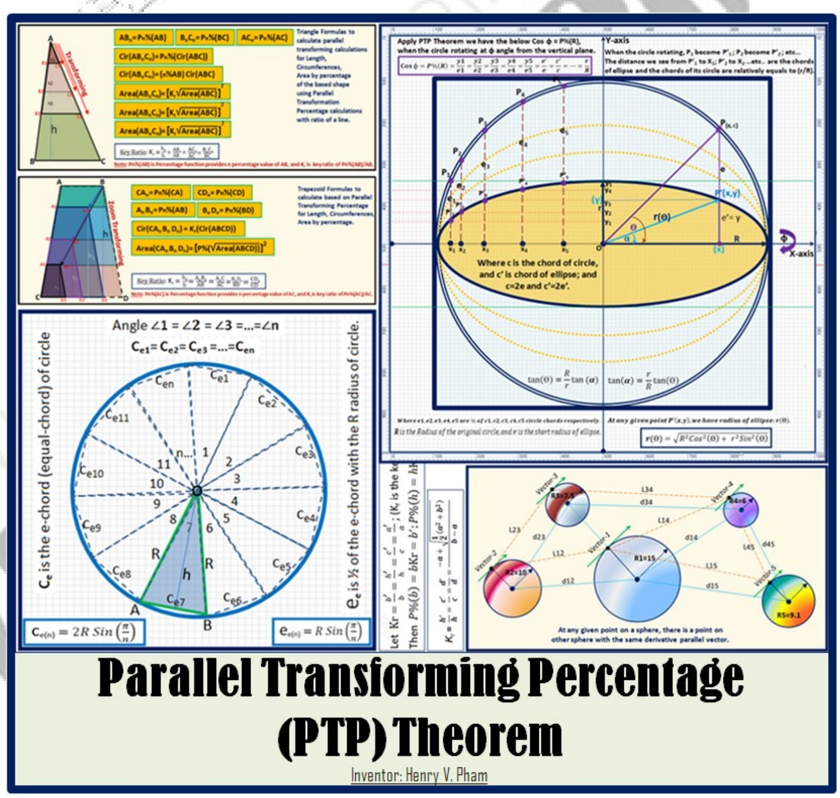

Figure-A: Parallel Transforming Percentage (PTP) Theorem -- Overview

1. The main apparatus for the Parallel Transforming Percentage (PTP) Theorem, comprising:

The PTP Theorem comes with 9 theorems and would provide the new geometry transforming methods to calculate and solve some mysteries of geometry problems and help to build magnified

HenryVPham@TheCloudOSCenter.com or henryvpham@gmail.com

objects or products easier in 2D or 3D parallel transforming geometry for lines, shapes and objects. The PTP Theorem would be used to calculate Mass Center Point, Mass Center Line , Object Center and to correct the existing incorrect Ellipse Radius Formula. Wherein, the 9 theorems are listed as below.

1. All spheres are parallel, and they are only different in form of percentage.

2. All circles are parallel on the same surface or on other parallel surfaces, and they are only different in form of percentage.

3. All lines, shapes, and objects are zoomified, are parallel transforming from its original, and they are only different in form of percentage.

4. A line that parallels with a side of a triangle will divide the other 2 sides into the same percentage on both sides as well as its parallel side.

5. A line that parallels with the bases of a trapezoid will divide the 2 sides into the same percentage on both sides, and this line is equal to the small base plus the parallel percentage of the difference of the 2 bases.

6. Ellipse is a closed curve with the perimeter that divides all the chord lines of the outer circle with radius R that parallel with the fixed short radius r of the ellipse into the same percentage on each chord line for all the chord lines with the same percentage of r/R.

7. The e-chords are the n lines adjacent to the n equal angles in a circle where n>2, are equal to 2 times of the circle radius multiply by sine of π/n.

8. The e-chord shape with all n sides equal is the largest shape compares to other shapes with the same number of n chord lines that are not equal in a circle, and the shape with more e-chord lines has larger area.

9. The rectangle in an ellipse which belongs to the e-chord square of the outer circle of the ellipse, has the largest area with the width equals to √2 multiply by the fixed long radius R, and the height equals to √2 multiply by the fixed short radius r of the ellipse.

2. Theorem-1 apparatus of claim 1, further comprising:

   The "All spheres are parallel, and they are only different in form of percentage." Wherein, At any given point on a sphere, there is always a point on other sphere with the same derivative of parallel vector with the sphere has infinite sides on any direction.

3. Theorem-2 apparatus of claim 1, further comprising:

   The "All circles are parallel on the same surface or on other parallel surfaces, and they are only different in form of percentage." Wherein, there is always a point on other circle with the same derivative of parallel vector with circle is the shape that has infinite sides.

4. Theorem-3 apparatus of claim 1, further comprising:

   The "All lines, shapes, and objects are zoomified, are parallel transforming from its original, and they are only different in form of percentage." Wherein, the transformation proofs of triangle, trapezoid, circles shapes and spheres, when the whole shape or object changing or transforming in ratio or percentage, all the lines are also changing in the same rate.

Henry V. Pham

5. Theorem-4 apparatus of claim 1, further comprising:

   The "A line that parallels with a side of a triangle will divide the other 2 sides into the same percentage on both sides as well as its parallel side." Wherein, the triangle has a line is parallel with a side, the inner triangle is considered zoomification transforming and the surface area of new triangle is also considered surface transforming with its original one with all 3 sides parallel with the outer triangle. The triangle transformation is the primary geometry shape that provides the crucial transforming for many other shapes where triangle could be in any complex geometry.

6. Theorem-5 apparatus of claim 1, further comprising:

   The "A line that parallels with the bases of a trapezoid will divide the 2 sides into the same percentage on both sides, and this line is equal to the small base plus the parallel percentage of the difference of the 2 bases." Wherein, trapezoid is the bottom part of the triangle; applying PTP theorem from Triangle Transformation we can find the top omitted triangle then we can find the trapezoid.

7. Theorem-6 apparatus of claim 1, further comprising:

   The "Ellipse is a closed curve with the perimeter that divides all the chord lines of the outer circle with radius R that parallel with the fixed short radius r of the ellipse into the same percentage on each chord line for all the chord lines with the same percentage of r/R." Wherein, the ellipse is in its outer radius circle with the outer circle rotates in certain angle on its plane would have on center or one radius. In another word with short definition, "Ellipse is a circle which rotates an angle on its plane". The existing Ellipse definition states, "Ellipse is a closed curve, the locus of a point such that the sum of the distances from that point to two other fixed points (called the foci of the ellipse) is constant; equivalently, the conic section that is the intersection of a cone with a plane that does not intersect the base of the cone." The existing Ellipse definition with 2 focuses was wrong which came up with wrong radius formula which was r(θ) = ab/sqrt(sqr(b Cos(θ)) + sqr(a Sin(θ))); where a is the short radius and b is the long radius of the Ellipse. Applying the PTP Theorem, the new formulas for the Ellipse are shown as followings; where 'α' is the angle of the radius of the Ellipse to the x-axis and 'θ' is the angle of the large radius R to the outer circle.

The ellipse radius: $$\boxed{r(\Theta) = \sqrt{R^2 Cos^2(\Theta) + r^2 Sin^2(\Theta)}}$$

Circumference of Ellipse: $$\boxed{C(x) = \frac{4r}{R}\int_0^R \sqrt{\frac{R^2}{r^2} + \frac{x^2}{R^2 - x^2}}\, d(x)}$$

Circumference of Ellipse in y-axis: $$\boxed{C(y) = \frac{4R}{r}\int_0^r \sqrt{\frac{r^2}{R^2} + \frac{y^2}{r^2 - y^2}}\, d(y)}$$

Circumference of Ellipse by angle: $$\boxed{C(\Theta) = 2\int_0^{\pi} \sqrt{R^2 Cos^2(\Theta) + r^2 Sin^2(\Theta)}\, d(\Theta)}$$

HenryVPham@TheCloudOSCenter.com or henryvpham@gmail.com

Area of Ellipse: $\boxed{A(x) = \frac{4r}{R}\int_0^R \sqrt{R^2 - x^2}\, d(x)}$

Area of Ellipse in y-axis: $\boxed{A(y) = \frac{4R}{r}\int_0^r \sqrt{r^2 - y^2}\, d(y)}$

Area of Ellipse by angle: $\boxed{A(\Theta) = 2\pi\int_0^{\pi/2} (R\,Sin(\Theta) * r\,Cos(\Theta))\, d(\Theta)}$

Volume of Ellipse: $\boxed{V(x) = \frac{2\pi r^2}{R^2}\int_0^R (R^2 - x^2)\, d(x)}$

Volume of Ellipsoid by angle: $\boxed{V(\Theta) = 4\pi\int_0^{\pi/2} \left(R\,Sin(\Theta) * r^2Cos^2(\Theta)\right)\, d(\Theta)}$

$$Ellipse\ Arc\ Length\ C(\Theta) = \int_{\Theta_1}^{\Theta_2} \sqrt{R^2Sin^2(\Theta) + r^2Cos^2(\Theta)}\, d(\Theta)$$

Relationship between α and Θ angles: $\boxed{\tan(\alpha) = \frac{r}{R}\tan(\Theta); \quad \tan(\Theta) = \frac{R}{r}\tan(\alpha)}$

8. Theorem-7 apparatus of claim 1, further comprising:

The “The e-chords are the n lines adjacent to the n equal angles in a circle where n>2, are equal to 2 times of the circle radius multiply by sine of π/n.” Wherein, the e-chords would form a polygon shape with all equal sides in a circle; note that the “n lines adjacent to the n equal angles” can be reworded as “n lines opposite to the n equal angles” for more clarification.

9. Theorem-8 apparatus of claim 1, further comprising:

The “The e-chord shape with all n sides equal is the largest shape compares to other shapes with the same number of n chord lines that are not equal in a circle, and the shape with more e-chord lines has larger area.” Wherein, The e-chord shape with all n sides equal will cover largest area compare to other shapes with the same number n sides in a circle; and circle is the shape that has largest area compare to other shapes with the same circumference.

10. Theorem-9 apparatus of claim 1, further comprising:

The “The rectangle in an ellipse which belongs to the e-chord square of the outer circle of the ellipse, has the largest area with the width equals to √2 multiply by the fixed long radius R, and the height equals to √2 multiply by the fixed short radius r of the ellipse .” Wherein, the e-chord-rectangle which is the middle rectangle shape inside the magic square of the outer circle of the ellipse, has greatest area compare to other rectangles within the ellipse. The E-chord-rectangle Area can be calculated by the formula below, where r is the small radius and R is the large radius or the ellipse.

HenryVPham@TheCloudOSCenter.com or henryvpham@gmail.com

The e-chord rectangle Area: $\boxed{A_{r\text{-}max} = L \times W = (R\sqrt{2}) \times (r\sqrt{2}) = 2Rr}$

11. The real-life applications of claim 1, further comprising:

    The PTP Theorem provides new geometry transformation calculation which was used to correct the existing Ellipse radius formula, calculate Mass Center Lines, Mass Center Points and Object Center Points, Wherein, the PTP Theorem was used to find the Mass Center Point of a triangle with Recursive Geometry methodology which was used in the 'Cybercopter Flyer' invention which was submitted on 2024/10/23 with U.S. PCT/US24/52515 and International PCT/IB2024/000800 Patent Numbers shows in Figure-Ref1 below from the original invention document with the magic transforming in 70.71% which is 1/√2. The PTP Theorem also works for circle shape, Figure-E4 in the original document of the 'One Round Chamber' invention which was submitted on 2025/12/23 with U.S. PCT/US24/61100 and International PCT/IB2025/000695 Patent Numbers, shows Mass Center Radius of the drum which shows the magic transforming in 70.71% which is also 1/√2.

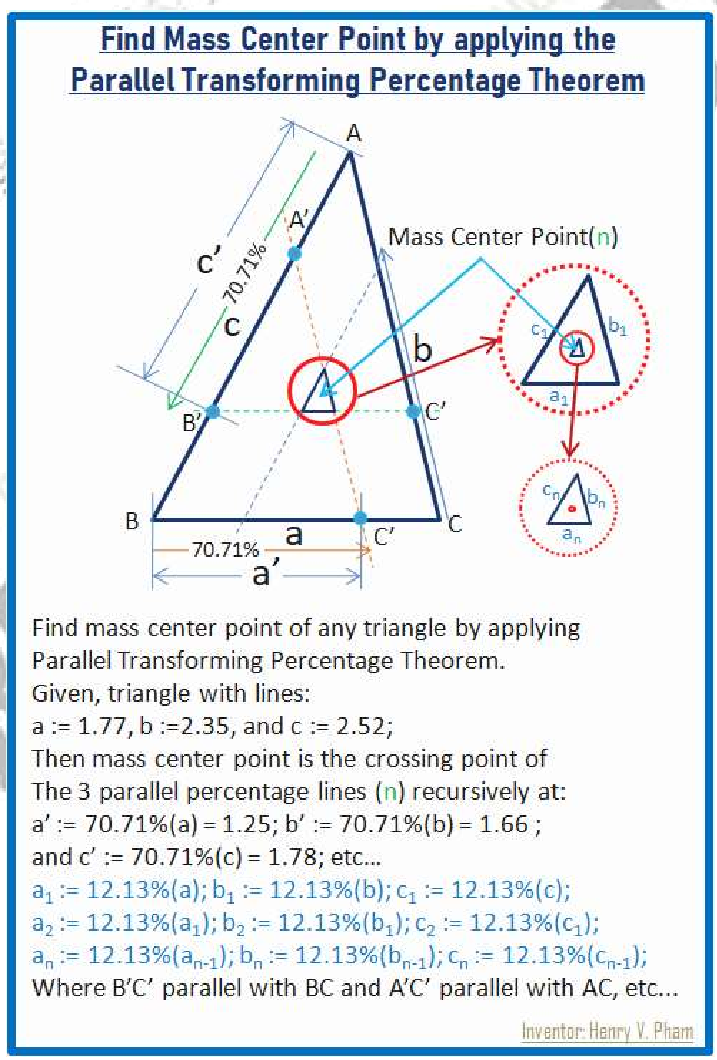

Figure-Ref1: Find Mass Center Point of Triangle

HenryVPham@TheCloudOSCenter.com or henryvpham@gmail.com

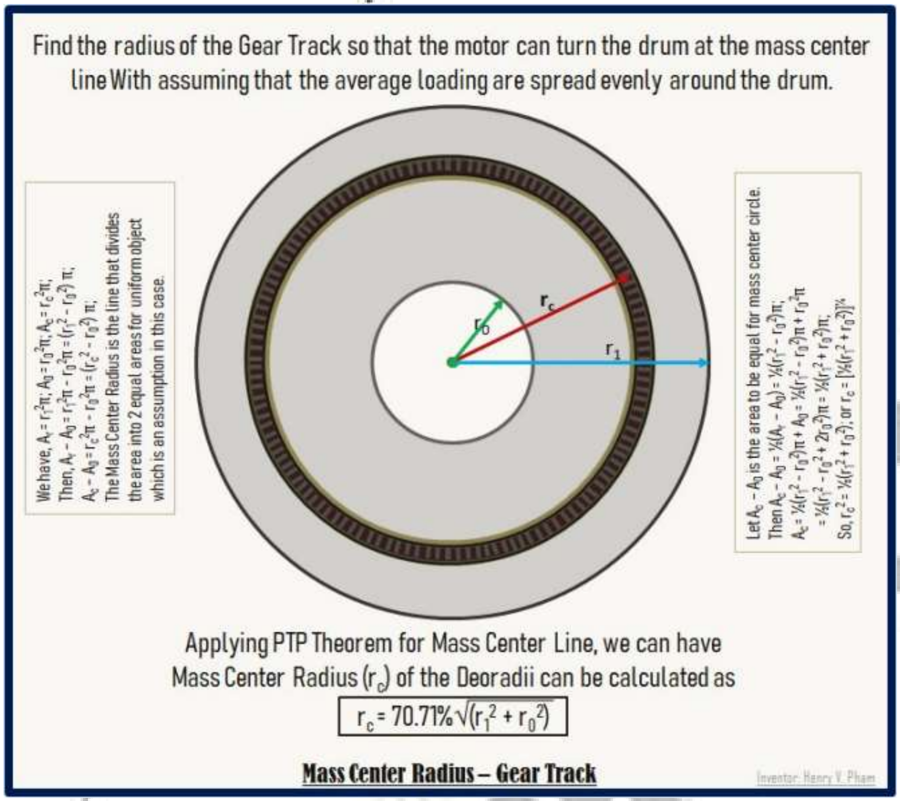

Figure-E4: Chamber Rotator Drum Mass Center Radius Calculation

Inventor name: Henry Viet Pham
Email Address: HenryVPham@Gmail.com
Business Website: www.TheCloudOSCenter.com
Phone Number: 714-686-0927