

A new concept for engineering trials

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Abstract

It is well known that the negative results of Michelson – Morley experiment gave courage to Albert Einstein to arrive at a conclusion that there is NO ether at all .Consequently this led to Einstein the light velocity c is a constant. This created the special relativity theory. The investigations devoted to the fifth Euclidean postulate problem gave birth to two consistent models of non – Euclidean geometries namely elliptic and hyperbolic. Einstein applied the concepts of these geometries to formulate general relativity theory. The general relativity is the geometrical interpretation of spacetime and matter. Each and every new physical theory relies on a new branch of geometry. Keeping this in mind, the author has proposed an entirely new idea for the development of a new branch of applicable geometry and engineering design& mechanism and trials.

Key words: Physical and Engineering applications of Euclidean & non – Euclidean geometries.

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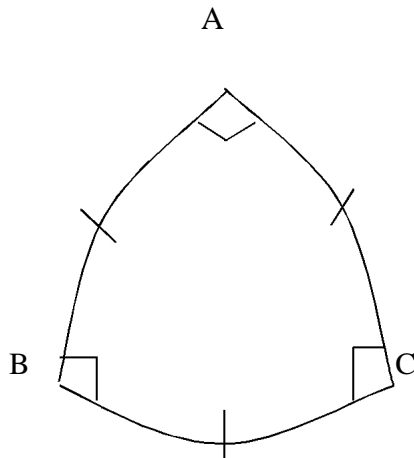


Figure 1 (Spherical)

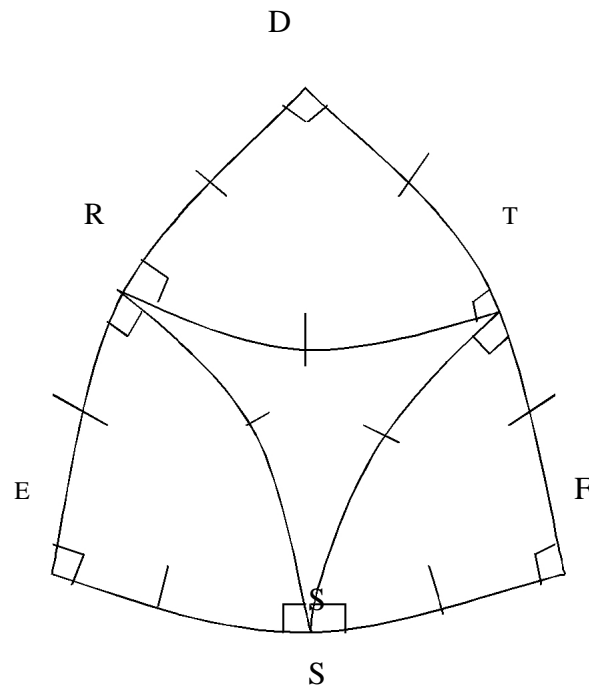


Figure 2 (Spherical)

1. Construction

Let ABC and DEF are spherical equilateral triangles such that all the three interior angles are right angles and $DE = 2 AB$. Let R , S , and T are the mid points of DE , EF and FD respectively Join B and T , T and S and S and R

2. Results

By side angle side correspondence triangles ABC , DRT , ERS and STF are congruent.

So all the interior angles of these equilateral triangles are right angles

$$DRT + ERS = ESR + FST = DTR + STF = 180 \text{ degree} \quad (1)$$

$$\text{But } DRT + TRS + ERS = ESR + RST + FST = DTR + RTS + STF = 180^\circ \quad (2)$$

Comparing (1) and (2) we get a contradiction that the angles

$$RST = STR = TRS = 0 \text{ and the angle sum of triangle } RST \text{ is zero.} \quad (3)$$

3. Discussion

Needless to say, equations (2) and (3) are contradictions. Our constructions and proofs are easy, very easy, in fact, too easy to carry out. And there is no flaw at all. These negative results contain a hidden mathematical treasure. Only further probes will unlock this mystery. Due to the rapid expansion of the frontiers of physics and engineering, the demand for higher-level mathematics is increasing yearly. Theoretical Physics is the formulation and mathematical development of fundamental physical theories, such as mechanics, relativity, cosmology and thermodynamics. The Physics is a vast subject and includes areas such as: Astrophysics includes study of the origins and evolution of the solar system, making use of data collected from international telescopes and satellite observatories. Mathematics and physics are fundamental to many aspects of modern life. This includes technology, such as the computer, the laser, the compact disc, nanotechnology, space travel, mobile phones, MRI (magnetic resonance imaging)... the list is endless! Government, industry and commerce also utilize the detailed analytical and modelling capability of mathematics and statistics to underpin many activities. But despite these real facts, there are many unsolved and challenging problems in science particularly in physics. To know the ultimate nature of this universe is a burning cosmological problem. In order to solve the current unsolved problems, the origin of a new mathematical field is required.

Mathematical concepts are widely applied in mechanics of particles and systems, mechanics of deformable solids, fluid mechanics, optics, electromagnetic theory, classical thermodynamics, heat transfer, quantum theory, statistical mechanics, structure of matter, relativity and gravitational theory, astronomy and astrophysics, geophysics,

bio physics , systems theory, control theory , biology and other natural sciences , game theory, economics, social and behavioral sciences , land survey , architecture and all the engineering filed. Without the applications of mathematics no science and even no arts can develop and flourish. There are many great unsolved and challenging problems in physics such as quantum gravity, understanding the nucleus, fusion energy, climate change, turbulence, glassy materials, high-temperature superconductivity, solar magnetism, complexity, gravitational waves and their detection , neutron stars and pulsars. supernova stars , black holes. cosmic strings , quasars and galactic nuclei. formation of galaxies , the problem of dark matter hidden mass and its detection , the origin of super high-energy cosmic rays , gamma-ray bursts. Hyper novae, neutrino physics and astronomy, neutrino oscillations , non conservation of CP invariance and consciousness. In order to solve and to know the ultimate reality of Nature, the creation of new mathematical fields is a must.

Physics is an area of science where many branches of mathematics have been directly applied. Nature seems to obey 'mathematical rules' rather than acting whimsically. In other words, it seems that natural laws can be expressed in terms of mathematics To a physicist, mathematics is a toolbox. Before attacking a particular problem, you should have the necessary tools for the job. There are some tools that should be in any physicist's toolbox, but as they specialize, they will add extra tools needed for the specific problems at hand. Each new development in physics often requires a new branch of mathematics.. The language of physics is mathematics but physics is applied mathematics. The following connections have been widely agreed: Classical mechanics – Calculus and geometry , Electromagnetism - Vector calculus , General relativity - Spherical geometry, differential geometry and differential equations , Quantum field theory - Matrices, group theory , differential equations and probability, Superstring theory - Knot theory. There are many challenging and unsolved physical problems. The solutions for these problems rely on a new field of mathematics. The author hopes that the research community will use my findings as one of the foundation stones for the creation of a new field of science.

4. Conclusion and a proposal

For rocket and missile installation and count down, the findings of this work may be tested. Figures 1 and 2 are the quadrature of two different spheres S_1 and S_2 . Two installation platforms may be constructed as S_1 and S_2 . At the point R , the rocket and missile may fixed for trialing purposes and tests. These experimental approaches may yield new results and applications. While concluding his spherical geometrical paper Riemann wrote: “Here after it is up to physicist to apply my findings.” I also recall this and politely request engineers to pit this result in to testing.

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