On Geometrical Physics

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Abstract

A concept for the origin of a new field of geometry was proposed.

PACS: 02,40, Dr

Keywords: Spherical geometry, Euclid's 5th postulate.

Construction: Construct spherical triangles NAB and NCB where all the each interior angle is equal to 90 degree. On AC, choose a point D. with center N and radius ND, describe an arc contacting NB at E and NA at F. By SAS correspondence, triangles NED and NEF are congruent. So angels NED and NEF are equal; and they are right angles. Since NE=NF by construction, we get that angle NFE is also equal to 90^0. By construction NA=NB and NE=NF. So, we have AF=BE. Consequently we get that ABEF is a Saccheri quadrilateral whose summit angles are right angles. This establishes the fifth Euclidean postulate [2]

Conclusion: Euclid's parallel postulate is a special case. But we have proved it. So, this is a problematic problem. There is something in their peculiar phenomenon. Further studies may give birth to a new field of geometry. Like abstract algebra, abstract geometry is also possible.

Euclidean geometry is applied in classical mechanics. The formulae of Lobachevskian geometry are widely used to study the properties of atoms in quantum mechanics. Einstein used the principles of Riemannian geometry to formulate general theory of relativity. A turning point in geometry creates a new field in physics. Similarly, the origin

of a new geometry will be a landmark in the history of physics. **Readers' comments are welcome.**

References:

[1] Euclid : Elements I, Propositions 1-28.

[2] Effimov, NV: Higher Geometry, Mir Publishers, Moscow, 1972, Pp1-30.