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DERIVATIVE FORMULAS IN DIFFERENTIAL GEOMETRY COURSE

During the development of the Information Society, particular relevance is paid to the problem of differential geometry application in different fields of modern life. One of the main issues that considers differential geometry is the question of surfaces which are also called derivative formulas of Gauss and Veyhartena.

Derivative formulas are important components of the basic surfaces theory equations, the study of which is an integral part of the differential geometry course in higher education. Therefore, the topicality of this problem is determined by the fact that in the course of differential geometry university lacks sufficient training hours for better exploring this topic; by the discrepancy between a high level of students' learning and their inability to use appropriate mathematical tools in solving practical problems. The question of e-teaching support in teaching differential geometry is an up-to-date problem to.

Analysis of special and educational literature has shown that the issue of differential geometry, including the use of derivative formulas solving problems involved in domestic mathematicians, foreign as well as ones such as: M.I. Kovantsov, A. Pryshlyak, A.S.Fedenko, et al. problem of the use of e-teaching in higher education complex studied O.E. Kovalenko, I.G. Zakharova, N.I. Lazarev, V.A. Kazakov, T. Dmitrenco.

Derivative formulas have taken an important place in the course of differential geometry at high school. Our research explains how the derivational equations help to expand the surfaces theory.

The term "derivational formulas" is derived from "derivee".

The content of derivative formulas laies in the fact that they represent the first partial derivatives of the main vectors in a given point of the surface - two tangential and one normal.

Derivative formulas play a fundamental role in the theory of surfaces in general, including the study of the internal geometry of the surface (inner surface geometry is called a geometry that studies the properties of figures using only the coefficients of the first quadratic form).

Derivative formulas are used while proving different theorems, in particular, the proof of Theorem Rodrigo. Also, using derivational formulas can for example, to answer the question: how define Gaussian curvature. The Bonnet theorem can be proved with the halp of derivative equations.

Derivative equation is the basic computational unit in the theory of surfaces. When solving problems of differential geometry specific examples can be seen as derivational formulas should be used as in solving problems in evidence and in solving standard problems on calculation. Derivative equation is widely used for finding the geodesic curvature and the Gaussian curvature at finding. In the course of solving a number of problems, it can be concluded that the derivational formula is a basic formula in the theory of surfaces. Its study is associated with many objects of the inner surface geometry that contribute to the development of abstract - logical thinking and spatial imagination.

In general, the derivational equations are of great interest because they can feel the unity of the mathematical world, to find a common effective method for describing surfaces. They are the main computing device in the theory of surfaces. This is done through a variety of analytical methods that are used to describe surfaces.

Literature

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