BENDING OF THE SURFACES OF THE BINORMALS OF THE SLOPE LINES

Tetiana Kresan[1], Serhii Pylypaka[2], Zynovii Ruzhylo[2], Ivan Rogovskii[2], and Oleksandra Trokhaniak[2]

[1]Separated Subdivision of National University of Life and Environmental Sciences of Ukraine Nizhyn Agrotechnical Institute
[2]National University of Life and Environmental Sciences of Ukraine

April 28, 2020

Abstract

The bending of the surfaces of the binormals by deformation of the directing curve, which is the slope line, is considered. Such deformation changes the curvature of the curve, but it remains a slope line. The rectilinear generators of the surfaces at deformation of the curve coincide with the unit binormal of the accompanying trihedral at all its points. Parametric equations of continuous bending of these surfaces have been made by changing the angle of inclination of the directional slope line. The initial slope curve is given by the angle of its rise and the conformity of change of curvature as a function of arc length. The partial case where the curvature of the initial curve is constant is considered. In this case, it is shown that helicoids, including the screw conoid, are the set of surface bends. Specific examples are considered. According to the obtained equations, the surfaces that are the bending of the initial are constructed.

Hosted file

`Article_1.docx` available at https://authorea.com/users/308472/articles/439499-bending-of-the-surfaces-of-the-binormals-of-the-slope-lines

$$\psi_b$$

$$\beta_b$$

7

8

9

12

14