USING TOPOLOGICAL TRANSFORMATIONS OF THE SPHERE TO DESIGN SURFACES HAVING TWO FAMILIES OF LIGHT LINES

The authors discuss construction of surfaces having two families of light lines using topological transformations of the sphere.

The light framework of surfaces, meeting esthetic requirements, is designed in various ways, which can be reduced to the design of a framework of proportional and congruent curves.

Topological transformation of the sphere into a surface of the same topological class is considered as a method for design of continuous surfaces having two families of light lines.

Transformation of points of the constructed surface is performed together with the space of three mutually perpendicular beam planes, as well as beams of radial planes.

This method, employed for the construction of the frame surface and light lines, may be used to generate aesthetically attractive surfaces. The shape of the contour surface can be varied within certain limits, although it maintains its pre-set parameters.

Key words: plane curves, contour curves, light lines, points of light, surface line, sphere.

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