

**THE BOUNDARY VALUE PROBLEM
FOR THE SPHERICAL ZONE**

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In the present paper the non-shallow spherical bodies of shell type are discussed. Their internal geometry is alterable towards the thickness. Here we consider the case, when the displacement vector is independent from the thickness coordinate x_3 . We introduced at the sphere the isometric coordinate system. The equilibrium equations and stress-strain relations (Hook's Law) are given in the system of isometric coordinates. The general representations of the system of equilibrium equations and the formulas of the components of the displacement vector are expressed with the help of three holomorphic functions in the system of isometric coordinates.

The boundary value problem for the spherical shell the stereographic production of which in the equatorial space gives us the circular zone has been solved. We have to find the elasticity balance, when the displacements are marked on the boundary points. The circular zone is bounded with two concentric circles.

The holomorphic functions are intraduced by series and on this way the elasticity balance when the components of the displacement vector are marked on the boundary points has been found.