ON ONE BOUNDARY VALUE PROBLEM FOR THE NONLINEAR NON-SHALLOW SPHERICAL SHELL

Bakur Gulua
Iv. Javakhishvili Tbilisi State University, I.Vekua Institute of Applied Mathematics, Tbilisi, Georgia
Sokhumi State University, Tbilisi, Georgia
bak.gulua@gmail.com

In this paper we consider nonlinear non-shallow spherical shells [1, 2]. By means of I. Vekua method a two-dimensional system of equations is obtained. Using the method of the small parameter, approximate solutions of I. Vekua's equations is constructed. The small parameter $\varepsilon = h / R$, where $2h$ is the thickness of the shell, R is the radius of the sphere. Using complex analysis, a concrete problem has been solved.

Acknowledgment. This work was supported by a financial support of Shota Rustaveli National Science Foundation (Grant SRNSF/FR/358/5-109/14).

References

1. Vekua, I.N.: Shell Theory: General Methods of Construction. Pitman Advanced Publishing Program, Boston-London-Melbourne, 1985.
2. Meunargia, T.V.: On one method of construction of geometrically and physically nonlinear theory of non-shallow shells. Proc. A. Razmadze Math. Inst., 119 (1999), 133-154.