

# **Hierarchical Models for Viscoelastic Kelvin-Voigt Prismatic Shells with Voids**

*George Jaiani*

e-mail: giorgi.jaiani@tsu.ge

Department of Mathematics

Faculty of Exact and Natural Sciences

I. Javakishvili Tbilisi State University

2 University St., 0186 Tbilisi, Georgia

The present paper is devoted to construction of hierarchical models for porous elastic and viscoelastic Kelvin-Voigt prismatic shells on the basis of linear theories. Using I. Vekua's [1,2] dimension reduction method, governing systems are derived and in the  $N$ th approximation boundary value problems are set. The ways of investigation of boundary value problems and initial boundary value problems, including the case of cusped prismatic shells [2], are indicated and some preliminary results are presented.

## **References**

1. I.N. Vekua, Shell Theory: General methods of construction, Pitman Advanced Publishing Program, Boston-London, Melbourne, 1985.
2. G. Jaiani, Cusped Shell-Like Structures, Springer, Heidelberg-Dordrecht- London-New York, 2011.