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ON I. VEKUA DIMENSIONAL-REDUCTION METHOD OF REDUCING THE MULTI-DIMENSIONAL PROBLEMS OF MATHEMATICAL PHYSICS ON LOWER-DIMENSIONAL ONES

The present work is devoted to the application and investigation of a dimensional-reduction method for some problems of linearized elastodynamics. I. Vekua's method of reduction of three-dimensional problems to two-dimensional ones is used.

Vekua's method has rather general nature and it can be applied not only to dynamical problems of elasticity theory. It may be considered as one of the ways of reduction the multi-dimensional dynamical problems of mathematical physics to dynamical problems of lower dimension.

We have considered these problems in Sobolev spaces; we have also considered the problems of convergence and estimate accuracy of the obtained two-dimensional dynamical model.