DIRECT PROBLEMS AND A ONE-DIMENSIONAL INVERSE PROBLEM OF ELECTROELASTICITY FOR "SLOW" WAVES

V. G. Yakhno and I. Z. Merazhov

The emphasis is on the direct (initial-boundary value) problems with particular boundary conditions and the inverse problem connected with determining the elasticity moduli and piezoelectric modulus of an electroelastic medium with cubic structure on some information about solutions to the direct problems. The moduli are assumed to be functions of depth only. The basic results of the present article are existence and uniqueness theorems of the direct and inverse problems under consideration together with stability estimates for solutions to the inverse problem.

Key words and phrases: electromagneto-elasticity, electroelasticity, elasticity moduli, piezoelectric modulus, direct problem, inverse problem, integral Volterra equation of the second kind.

Yakhno Valerij Georgievич
    Sobolev Institute of Mathematics,
    630090 Novosibirsk, Russia.
    E-mail: yakhno@math.nsc.ru

Merazhov Ilkhom Zavkidinovich
    Institute of Computational Mathematics
    and Mathematical Geophysics,
    Siberian University of Consumer's Cooperation,
    630090 Novosibirsk, Russia.
    E-mail: meraj@math.nsc.ru