

K. Svanadze

**A. Tsereteli Kutaisi State University
Kutaisi, Georgia**

**ON THE INVESTIGATION OF FUNDAMENTAL PLANE
CONTACT VALUE PROBLEM OF STATICS OF THE
THEORY OF ELASTIC MIXTURES**

1. Prof. M. Bacheleishvili proved the analogues of the well-known Kolosov–Muskhelishvili formulas of general representations for non-homogeneous equations of statics in the theory of elastic mixtures. It is shown that in this theory the displacement and stress vector components, as well as the stress tensor components, are represented through four arbitrary analytic functions.

2. Applying the complex-valued representation of components of the displacement and stress vector, the two-dimensional fundamental contact value problem of statics in the theory of elastic mixtures is investigated in the paper. Using the potential method and the theory of Fredholm type equations, the existence and uniqueness theorems are proved.

3. The paper deals with the construction of an explicit solution for the contact value problem in the case, when the contact curve is a circle or an axis. In both cases the contact problems reduce to a system of Fredholm type equations, the solutions of which are vector-functions given on the border.