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Integral equations of elastic equilibrium for a composite space with given ring gaps along the interface plane. (English. Russian original) [Zbl 0876.73009](#)

Phys.-Dokl. 39, No. 12, 839-842 (1994); translation from *Dokl. Akad. Nauk, Ross. Akad. Nauk* 339, No. 6, 746-749 (1994).

Following *A. Ya. Aleksandrov* and *Yu. L. Solov'ev* [*Spatial problems of elasticity theory*, Moscow, Nauka (1978)], the authors discuss the following boundary value problem for the generalized analytic functions: find Φ_k, Ψ_k analytic in the half-plane D_k ($k = 1, 2$), $\partial D_1 = \Gamma = \partial D_2$, $D_1 \cup \Gamma \cup D_2 = \overline{\text{complex plane}}$, Γ is the real axis, with the boundary conditions $\Phi_k(t) - \overline{\Psi_k(t)} = f_k(t)$, $t \in L$, $a_1 \Phi_1(t) = b_1 \overline{\Psi_1(t)} + c_1 \Phi_2(t)$, $a_2 \Psi_1(t) = b_2 \overline{\Phi_1(t)} + c_2 \Psi_2(t)$, $t \in \Gamma \setminus L$, where a_k, b_k, c_k are given constants, and $f_k(t)$ is a given function. The problem is reduced to a singular integral equation.

Reviewer: [V.Mityushev \(Ślupsk\)](#)

MSC:

[74B05](#) Classical linear elasticity

[74S30](#) Other numerical methods in solid mechanics (MSC2010)

[30G20](#) Generalizations of Bers and Vekua type (pseudoanalytic, p -analytic, etc.)

Keywords:

boundary value problem; generalized analytic functions; half-plane; singular integral equation