**Alexander Kuleshov**
*Moscow State University, Russia*

## Mixed Problems for the Equation of Longitudinal Vibrations of a Rod Consisting of Two Segments with Different Densities and Elasticity Coefficients

We consider four mixed problems with zero initial conditions and Dirichlet or Neumann boundary conditions for the equation of longitudinal vibrations of a rod consisting of two segments: one segment $0 \leqslant x < x_0$ with the linear density $\rho_1 = const$ and Young's modulus $k_1 = const$ and the other segment $x_0 \leqslant x \leqslant l$ with the linear density $\rho_2 = const$ and Young's modulus $k_2 = const$. Using recursion relations, we construct the generalized solutions of the above-mentioned problems and prove their uniqueness.