Numerical Realization of Boundary Problems of the Theory of Elasticity for a Circle with voids

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In the present work, static two-dimensional boundary value problems are solved for an elastic porous circle with voids. Special representations of the general solution of a system of differential equations are constructed using elementary functions, which allow the original system of equations to be reduced to equations of a simple structure and facilitate the solution of initial problems. The solutions of the problems are presented explicitly, in the form of absolutely and uniformly convergent series. The question of the uniqueness of regular solutions of the problems under consideration is investigated.

For a particular boundary value problem, a program has been compiled and numerical results have been obtained.