On the approximate conformal mapping of the unit disk on a simply connected domain

Shirokova E.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

We present a method of constructing the analytic function realizing an approximate conformal mapping of the unit disk on an arbitrary simply connected domain with the given smooth parametrically defined boundary. The method is based on a new boundary parameterization. Solution of the problem is reduced to the Fredholm integral equation of the second kind. We present the examples of three ways to solve the integral equation. © 2014 Allerton Press, Inc.

Keywords

conformal mapping, contracting mapping, integral equation