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A Boundary Integral Equation for Conformal Mapping of Bounded Multiply Connected Regions

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Abstract. A boundary integral method is presented for constructing approximations to the mapping functions of bounded multiply connected regions to the standard canonical slits domains given by Nehari [11]. The method is based on expressing the mapping function in terms of the solution of a Riemann-Hilbert problem which can be solved by a uniquely solvable boundary integral equation with the generalized Neumann kernel. Three numerical examples are presented to show the effectiveness of the present method.

Keywords. Numerical conformal mapping, multiply connected regions, generalized Neumann kernel, Riemann-Hilbert problem.

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