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CONFORMAL MAPPING OF CIRCULAR MULTIPLY CONNECTED DOMAINS ONTO SLIT DOMAINS*

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Abstract. The method of Riemann–Hilbert problems is used to unify and to simplify construction of conformal mappings of multiply connected domains. Conformal mappings of arbitrary circular multiply connected domains onto the complex plane with slits of prescribed inclinations are constructed. The mappings are derived in terms of uniformly convergent Poincaré series. In the proposed method, no restriction on the location of the boundary circles is assumed. Convergence and implementation of the numerical method are discussed.

Key words. Riemann–Hilbert problem, multiply connected domain, complex plane with slits

AMS subject classifications. 30C30, 30E25

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