

CONTENTS

ABSTRACT

Two dimensional, potential flows of ideal fluids past obstacles of arbitrary shapes, placed in channels with parallel sides are considered. Exact obstacle shapes cannot be prescribed initially; using conformal mappings, the problem is reduced to that of determining an analytic function $\omega(t)$ in the parametric t -plane such that it is regular in the half t -plane and satisfies homogeneous boundary conditions of the following form: on the real t -axis, the imaginary part is known. The solution is obtained by means of Reimann-Hilbert technique for solving homogeneous boundary-value problems. The selection of an appropriate curvature function is described. Various examples are considered and a possible extension of the method is formally indicated.

II.2.II. Linear $\beta(t)$ with one jump discontinuity for local values specified	25
II.2.III. Quadratic $\beta(t)$; three local values specified	30
III. Channel with Two Uniform Sections	39
III.2. I. Linear $\beta(t)$ with two end-values specified	37
III.2. II. Linear $\beta(t)$ with one juncture point. ..	41
III.2. III. Quadratic $\beta(t)$; three local values specified	43
III. Streamlines	46
III.1. Streamlines for Ex. I.2.1.(i)	47
III.2. Streamline for Ex. III.2.1.(ii)	51
CONTENTS	58