

## *On Covering Surfaces*

By Zenjiro KURAMOCHI

### CONTENTS

- Chapter I. Correspondence of boundaries
  - 1. Image of boundary points
  - 2. Extension of Fatou's theorem
- Chapter II. On accessible boundary points
  - 1. Measure of accessible boundary points
  - 2. Behaviour of Green's function
  - 3. Counter examples of the preceding theorems
  - 4. Type of covering surfaces
  - 5. Dirichlet problem on a covering surface
  - 6. Finitely sheeted covering surface
- Chapter III. Martin's topology and type of Riemann surface
  - 1. Singular point
  - 2. Miscellaneous theorems of subsurfaces
- Chapter IV. Behaviour of the boundary
  - 1. Analytic functions on  $O_{HB}$
  - 2. Gross's property

### Introduction

The purpose of the present paper is to investigate the behaviour of the boundary of a covering surface. In chapter I we shall consider the correspondence of the boundary points when the universal covering surface is mapped onto the unit-circle, and extend Fatou's theorem in such a case. Chapter II is devoted to the study of accessible boundary points from measure theoretic views. Thus our study is a continuation of that due to M. Ohtsuka<sup>1)</sup>. R. Nevanlinna discussed the Dirichlet

---

1) M. Ohtsuka: 1) Dirichlet problems on Riemann surface and conformal mapping. Nagoya Math. Journal, 3, 1951, pp. 91-135.

2) On a covering surface over an abstract Riemann surface. *ibid.*, 4, 1952, pp. 109-118.

3) Note on the harmonic measure of the accessible boundary of a covering Riemann surface. *ibid.*, 5, 1953, pp. 35-38.