Contents

Preface	ix
Chapter 1. The Nevanlinna Theory	1
§1.1. The Poisson-Jensen formula	1
§1.2. The characteristic function	5
§1.3. The Alhfors-Shimizu characteristic	7
§1.4. The First Fundamental Theorem	10
§1.5. Lemma on the logarithmic derivative	14
§1.6. The Second Fundamental Theorem	21
§1.7. Annotated notes	33
Chapter 2. The Singular Directions	37
§2.1. On some properties of monotonic functions	37
§2.2. The Boutroux-Cartan Theorem	49
§2.3. Fundamental theorem of value distribution of functions	
meromorphic in a disk	54
§2.4. The Julia and Borel directions	73
§2.5. On the growth of the entire function	88
§2.6. On the Nevanlinna direction	100
§2.7. Annotated notes	107
Chapter 3. The Deficient Value Theory	109
§3.1. The harmonic measure and the Lindelöf-type theorem	109
§3.2. The Length-Area Principle	118
§3.3. On the growth of meromorphic functions with deficient values	123
§3.4. The Weitsman Theorem	144
§3.5. The Edrei-Fuchs Theorem	158
§3.6. Annotated notes	188
Chapter 4. The Asymptotic Value Theory	195
§4.1. The asymptotic value and the transcendental singularity	195
§4.2. The Denjoy Conjecture	208
§4.3. Growth of entire functions along an asymptotic path	232
§4.4. An estimate on the length of the asymptotic path of an enitre	
function	247

viii CONTENTS

§4.5. Direct transcendental singularities	257
Chapter 5. The Relationship between Deficient Values and Asymptotic	
Values of an Entire Function	271
§5.1. The theorem of the bound and its application regarding	
functions meromorphic in the unit disk	271
§5.2. Entire functions of finite lower order	282
§5.3. On entire functions having a finite number of Julia directions	304
§5.4. Extremal length and Ahlfors Distortion Theorem	319
§5.5. On entire functions with zeros distributed on a finite number of	
half lines	330
Chapter 6. The Relationship between Deficient Values of a	
Meromorphic Function and Direct Transcendental	
Singularities of its Inverse Functions	349
§6.1. On meromorphic functions having deficiency sum two	349
80.2. On meromorphic functions of fair-	358
Some Supplementary Results	260
References	369
Neterences	371