

NAGOYA
MATHEMATICAL JOURNAL

VOL. 29

MARCH, 1967

PUBLISHED BY
DEPARTMENT OF MATHEMATICS, FACULTY OF SCIENCE
NAGOYA UNIVERSITY

NAGOYA
MATHEMATICAL JOURNAL

VOL. 29

MARCH, 1967

Edited by

NOBORU ITO, TAKEYUKI HIDA, TOMIO KUBOTA,
SIGEKATU KURODA, HISASI MORIKAWA, KIYOSHI NOSHIRO,
KATUZI ONO, KÔSAKU YOSIDA

PUBLISHED BY

MATHEMATICAL INSTITUTE, FACULTY OF SCIENCE
NAGOYA UNIVERSITY



能
代
清

Kiyoshi Noshiro

Professor Kiyoshi Noshiro was born on September 26, 1906 in Hakodate, Hokkaido. After graduating from the Mathematical Institute, Tokyo University, in March 1930, he was appointed Assistant of the Mathematical Institute, Hokkaido University, where he continued his study of complex function theory. In April 1935, he was promoted to Lecturer of the same University. In 1940, he was appointed Professor of the First Higher School, predecessor of the present Faculty of General Education of Tokyo University. In February 1941, he received the degree of Doctor of Science from Osaka University. In April 1942, when the Faculty of Science was founded in Nagoya University, he was appointed Professor of the Mathematical Institute of the same University, where he has been until now. His 60-th birthday was on September 26, 1966.

He went abroad twice, the first time to the United States as a Fulbright Research Scholar and the second time to the United States and Europe as a Visiting Professor.

He published 33 mathematical works; 14 books and 19 papers. His study on cluster sets for meromorphic functions is well-known. Among his books, General Function Theory I and II (in Japanese), Modern Function Theory (in Japanese) and Cluster Sets (in English) have been familiar with many mathematicians and students. It is remarkable how many mathematicians working on the function theory of one or several complex variables and on potential theory owe him their education.

He has been one of eight directors of the Mathematical Society of Japan for two years starting April 1962 and has been the editor of Nagoya Mathematical Journal since the Journal was founded in 1950.

The 29-th volume and a part of the 30-th and 31st volumes of this Journal have been undertaken to commemorate his 60 th birthday. Papers of his friends, his disciples and of some present or former staff members of Nagoya University have been gathered for this purpose.

Redaction of the
Nagoya Mathematical Journal

Mathematical works of K. Noshiro

Books :

1. 函数論概説 I (General theory of functions I), 1941, 岩波書店
2. 最近の函数論 (Recent theory of functions), 1941, 岩波書店
3. 函数論概説 II (General theory of functions II), 1944, 岩波書店
4. 極限論と集合論 (Theory of limits and theory of sets), 1944, 岩波書店
5. 幾何学的函数論 (Geometric theory of functions), 1949, アカデミア
6. 現代の函数論 (解析函数の特異点と値分布) (Recent theory of functions—singularities and value-distributions of analytic functions), 1953, 河出書房
7. 近代函数論 (Modern theory of functions), 1954, 岩波書店
8. 初等函数論 (Elementary theory of functions), 1954, 培風館
9. Cluster sets, Springer-Verlag. Berlin·Göttingen·Heidelberg (1960).
10. 微分学 (Differential calculus), 1960, 朝倉書店
11. 微分学演習 (Exercise, differential calculus), 1961, 朝倉書店
12. 初等函数論演習 (Exercise, elementary theory of functions), 1962, 培風館
13. 解析接続入門 (Introduction to the theory of analytic continuations), 1954, 共立出版
14. (with Leo Sario) Value distribution theory, D. Van Nostrand (1966).

Papers :

- [1] On the univalence of certain power series, J. Fac. Sci. Hokkaido Univ. 1 (1932), 157-161.
- [2] On the starshaped mapping by an analytic function, Proc. Imp. Acad. Tokyo 8 (1932), 275-277.
- [3] On the multivalency of a limited function, Proc. Phys.-Math. Soc. Japan 3. Ser. 14 (1932), 304-309.
- [4] On the univalence of certain analytic functions, J. Fac. Sci. Hokkaido Univ. 2 (1934), 89-101.
- [5] On the theory of schlicht functions, J. Fac. Sci. Hokkaido Univ. 2 (1934), 129-155.
- [6] Some theorems on a cluster set of an analytic function, Proc. Imp. Acad. Tokyo 13 (1937), 27-29.
- [7] On the theory of the cluster sets of analytic functions, J. Fac. Sci. Hokkaido Univ. 6 (1938), 217-231.
- [8] Contributions to the theory of meromorphic functions in the unit circle, J. Fac. Sci. Hokkaido Univ. 7 (1939), 149-159.

- [9] On the singularities of analytic functions, *Jap. J. Math.* **17** (1940), 37-96
(Thesis for a doctorate degree).
- [10] On the singularities of analytic functions with a general domain of
existence, *Proc. Japan Acad.* **22** (1946), 233-237.
- [11] Contributions to the theory of the singularities of analytic functions, *Jap.
J. Math.* **19** (1948), 299-327.
- [12] Note on the cluster sets of analytic functions, *J. Math. Soc. Japan* **1** (1950),
275-281.
- [13] A theorem on the cluster sets of pseudo-analytic functions, *Nagoya Math.
J.* **1** (1950), 83-89.
- [14] Open Riemann surfaces with null boundary, *Nagoya Math. J.* **3** (1951),
73-79.
- [15] On the theory of cluster sets of analytic functions (in Japanese), *Sugaku*
5 (1953), 65-72; *Amer. Math. Soc. Transl.* **8**, Ser. 2 (1958), 1-12.
- [16] Cluster sets of functions meromorphic in the unit circle, *Proc. Nat. Acad.
Sci. (Wash.)* **41** (1955), 398-401.
- [17] Cluster sets of pseudo-analytic functions, *Jap. J. Math.* **29** (1959), 83-91.
- [18] (with L. Sario) Integrated forms derived from non integrated forms of
value distribution theorems under analytic and quasi-conformal mappings,
*Festschrift zur Gedächtnisfeier für Karl Weierstrass 1815-1965, Wis-
senschaftliche Abhandlungen der Arbeitsgemeinschaft für Forschung des
Landes Nordrhein-Westfalen, Westdeutscher Verlag, Köln und Opladen,*
33 (1966), 319-324.
- [19] Some theorems on cluster sets, *Ann. Acad. Sci. Fenn., A. I.* **389** (1966),
1-8.

CONTENTS

Equicontinuity on Harmonic Spaces.....	C. CONSTANTINESCU	1
Some Results and Problems Concerning Chordal Principal Cluster Sets.	F. BAGEMIHL	7
On a Theorem of Schwarz Type for Quasiconformal Mappings in Space.	K. IKOMA	19
On the Class Number of a Relatively Cyclic Number Field....	H. YOKOI	31
Note on the Uniqueness Property of Weak Solutions of Parabolic Equations.....	T. KURODA	45
Perfect Picard Set of Positive Capacity.....	K. MATSUMOTO	51
A Property of Weak Solutions for Some Parabolic Equations of Higher Order.....	L. S. CHEN	57
Sur les Fonctions Méromorphes aux Limites Fines.....	N. TODA	61
PL-Submanifolds and Homology Classes of a PL-Manifold...	M. ADACHI	69
Generalization of Levi-Oka's Theorem Concerning Meromorphic Functions.....	J. KAJIWARA and E. SAKAI	75
A Theorem on Valuation Rings and its Applications.....	M. NAGATA	85
Sario's Potentials and Analytic Mappings.....	M. NAKAI	93
The Theorem of Identity for Coherent Analytic Modules....	H. FUJIMOTO	103
On q -th Derivative of Vector Bundles.....	A. KATO	121
Finite Dimensional Approximations to Some Flows on the Projective Limit Space of Spheres II.....	H. NOMOTO	127
Border Reduction in Existence Problems of Harmonic Forms.....	M. NAKAI and L. SARIO	137
Singular Sets of Some Kleinian Groups (II).	T. AKAZA	145
Hyperbolic Motions.	L. V. AHLFORS	163
On the Zeros of Power Series with Hadamard Gaps....	W. H. J. FUCHS	167
Definitions for a Class of Plane Quasiconformal Mappings.....	F. W. GEHRING	175
Regular Tsuji Functions with Infinitely Many Julia Points.	W. K. HAYMAN	185
A Boundary Theorem for Tsuji Functions.	E. F. COLLINGWOOD	197
A Method of Two-Level Simplification of Boolean Function.	T. UMEZAWA	201

Finite Dimensional Approximations to Band Limited White Noise.....	
.....	T. HIDA and H. NOMOTO 211
Some Remarks in the Fourier Analysis.	T. TATUZAWA 217
On Mean Distortion for Analytic Functions with Positive Real Part in a Circle.	Y. KOMATU 221
On the Balayage for Logarithmic Potentials.	N. NINOMIYA 229
Planar Coverings of Closed Riemann Surfaces.....	J. TAMURA 243
A Note on Tangent Bundles.	K. SHIRAIWA 265
Remark on the Dual EHP Sequence.	Y. NOMURA 269
The Genus Field and Genus Number in Algebraic Number Fields.	
.....	Y. FURUTA 281
On the Non-Minimal Martin Boundary Points.....	T. IKEGAMI 287