OCTOBER, 1986

VOL. LXII, Ser. A, No. 8

PJAADT 62A(8) 285-326 (1986)

ISSN 0386-2194

PROCEEDINGS

OF THE

JAPAN ACADEMY

SERIES A

MATHEMATICAL SCIENCES

CONTENTS

Papers Communicated:—

Page

S. KAWASHIMA: Large-time Behavior of Solutions for Hyperbolic-parabolic Systems of Conservation Laws 285

M. KUBO: Periodicity and Almost Periodicity of Solutions to Free Boundary Problems in Hele-Shaw Flows 288

S. IGARI: On Kakeya's Maximal Function 292

Y. OKAZAKI: Boundedness of Closed Linear Operator T satisfying $R(T) \subset D(T)$. 294

M. NAKASHIMA: Some New Two-step Integration Methods 297

Y. MIZUTA: On the Existence of Polyharmonic Functions in Lebesgue Classes 300

K. TAMANO: Products of Compact Fréchet Spaces 304

Y. FUJIMOTO: Pluricanonical Mappings of Elliptic Fiber Spaces . . . 308

Y. MOTOHASHI: A Note on the Mean Value of the Zeta and L-functions. IV 311

N. KUROKAWA: String Theories and Prime Number Theories 314

T. FUKUDA, K. KOMATSU, and H. WADA: A Remark on the λ-invariant of Real Quadratic Fields 318

(*Continued on Back Cover*)

Published by the Japan Academy

Ueno Park, Tokyo

THE JAPAN ACADEMY

(THE IMPERIAL ACADEMY OF JAPAN TILL DEC., 1947)

PRESIDENT: Hiromi ARISAWA

SECRETARY-GENERAL: Kenjiro KIMURA

CHAIRMAN OF SECTION I: Yoshitaro WAKIMURA

CHAIRMAN OF SECTION II: Seiji KAYA

PUBLICATION COMMITTEE

CHAIRMAN: THE SECRETARY-GENERAL

Setsuro EBASHI (*Pharmacology and Biophysics*)

Yoshio FUJITA (*Astronomy*)

Shinji FUKUI (*Mechanical Engineering*)

Naohide HIRATSUKA (*Plant Pathology and Mycology*)

Teiji ICHIKO (*Japanese Literature*)

Yasuji KATSUKI (*Physiology*)

Masaakira KATSUMOTO (*Civil Law and Copyright Law*)

Tsunahiro KIKUI (*Law of Civil Procedure*)

Fumio NAKAJIMA (*English Linguistics*)

Kiyoshi TAKEWAKI (*Endocrinology*)

Takao TSUCHIYA (*Economic History of Japan*)

Yuzo YAMADA (*Economics*)

Kisaburo YOKOTA (*Public International Law*)

Kôsaku YOSIDA (*Mathematics*)

NOTES

The papers printed in the Proceedings are generally résumés, while the publication of the full texts is left to the respective authors' choice.

All communications relating to the Proceedings should be addressed to the Secretary-General at the Office of the Academy, Ueno Park, Tokyo, 110.

Those who desire for particular articles may apply for their reprints to the respective authors.

Agents: Maruzen Co. Ltd., 3-10, Nihonbashi 2 Chome, Chuo-ku, Tokyo, 103