

## No. 27 A

# NATURAL SCIENCE

## CONTENTS

HASHIZUME, M. : Examples of Isospectral but not Isometric 24-dimensional Flat Tori .....	1
ODA, S., YOSHIDA, K. : Notes on Anti-integral Elements and Pseudo-simple Extensions .....	5
KIMURA, H., SAKAKIHARA, M., NIKI, H. : Boundary Matrix Method with Method of Fractional Steps for Heat Equation .....	11
IGUCHI, A., SAKAKIHARA, M., NIKI, H. : Approximate Solution of Heat Equation with Chebyshev Heat Polynomial .....	25
AKIYAMA, N., TAHARA, S. : Optical Detection of the Hyperfine Structure of F Center by Monitoring the Magnetic Field Dependence of Luminescence .....	35
OHKAME, M., KISIMOTO, T. : Aeronautical Movement of a Winged Seed —— Seeds of Yam —— .....	45
OHKURA, H. : De-excitation Processes of the Optically Excited F Centers .....	61
TASHIRO, T., NAGAO, J., ISHII, K., NODA, H., KINOSHITA, K. : Simulation of Hadron- Nucleus Collision Based on Covariant Constituent Cascade Model .....	69
YAMAGUCHI, M., FUJII, Y., NAKAMURA, M., SHIGI, T. : Heat Transfer in HeII in a Capillary Tube (II) .....	81
WATANABE, K. : ALTERNATIVE INTRODUCTION TO QUANTUM MECHANICS .....	89
AIKOH, H. : Reduction of Mercuric Ion by Superoxide Anion Radical <i>In Vitro</i> .....	107
KAWAMURA, H., YAMAGUCHI, K., KAKITANI, S. : Synthesis of Solid Solutions in the System Åkermanite-Hardystonite .....	111
KANADANI, T. : Age Hardening in Low-Concentrated Al-Ag Alloys .....	119
MARUYAMA, Y., SAWADA, T. : Mathematical Formulation of a Panel Method Program for Supersonic Unsteady Flow Calculations .....	129
TAKANO, Y., NAKAYAMA, K., SAEKI, M., YAGYU, S. : A Method of Detection of the Minute Irregularity through Changes of both Speed and Tension. And its Application	147
MAEDA, K. : The Design of Structurally Stable Finite Settling Time Control System by Two- Degrees-of Freedom .....	151
OHSAKA, K., FUJIMOTO, S. : Robust Trajectory Control for Robot Manipulators .....	163
DOHTA, S., MATSUSHITA, H., WATANABE, Y. : High Speed Positioning Using Pneumatic Motors .....	177
MATSUSHITA, H., DOHTA, S., NISHIMURA, K. : Research on the Characteristics of Air Suspension with Preview Control and its Realization .....	189
OHKURA, M., NOMURA, T., SHIONO, M., HASHIMOTO, R. : On Construction of Japanese Linguistic Hedges .....	201
SHIONO, M., TAKENAKA, Y. : An Experiment on Similar Handprinted KANJI Recognition by Directional Segment Feature using Neural Networks .....	215
LI, Q., KONISHI, K., MIYAGAKI, Y. : Antimultipath Performance of On-Off Keyed FSK Signaling .....	227
NARIHISA, H., HAMADA, W. : On the Two dimensional expanding of clothes .....	241
OZAWA, Y., NARIHISA, H. : On the Characteristics of Sparse Matrix Computation Processing .....	251
HIGASHI, T. : Interpretation of Perception Information Processing from viewpoint of Spectrum Analysis .....	263
IRIE, K. : Rain Attenuation Measurement in 12 GHz Satellite Communication .....	275
KIMURA, H., ICHIMURA, M., KADOWAKI, S., SAWAMI, H., SAKAKIHARA, M., SEI, K., HARADA, T. : Personal Computer Communication System for Informations Science Education —— Aleph Net —— .....	283
INOKIHARA, K. : A study of Seoi-nage for Judo .....	297
KAWAKAMI, M., ENOMOTO, Y., INOKIHARA, K., MATSUBARA, T., OHATA, M. : The Correlation between Heart Rate and Short-Interval —— Training of 200m ——	311
MATSUBARA, T., INOKIHARA, K., KAWAKAMI, M., UKITA, T., ARAKI, I., ARAKI, N., SHIRAGAMI, K. : On the Effect of the Darts Training .....	325