

数理解析研究所講究録 1782

流体と気体の数学解析

京都大学数理解析研究所

2012年3月

RIMS Kôkyûroku 1782

Mathematical Analysis in Fluid and Gas Dynamics

July 6 ~8, 2011

edited by Takayuki Kobayashi

March, 2012

Research Institute for Mathematical Sciences

Kyoto University, Kyoto, Japan

This is a report of research done at the Research Institute for Mathematical Sciences, Kyoto University. The papers contained herein are in final form and will not be submitted for publication elsewhere.

流体と気体の数学解析
Mathematical Analysis in Fluid and Gas Dynamics
RIMS 研究集会報告集

2011年7月6日～7月8日

研究代表者 小林 孝行 (Takayuki Kobayashi)

副代表者 西畑 伸也 (Shinya Nishibata)

目 次

1. Resolution of the Stokes paradox by the rotation of bodies in the plane ----- 1
名大・多元数理科学 (Nagoya U.) 菱田 俊明 (Toshiaki Hishida)
2. Lower bound of L^2 decay of the Navier-Stokes flow in the half space R^{\sharp} ----- 17
東北大・理学 (Tohoku U.) 岡部 考宏 (Takahiro Okabe)
3. Mild solutions to the Navier-Stokes equations in unbounded domains
with unbounded boundary ----- 28
岐阜大・工 (Gifu U.) 澤田 宙広 (Okihiro Sawada)
4. Fundamental solutions of diffusion equations related to certain Dirichlet forms
and the quasi-geostrophic equation ----- 44
神戸大・理学 (Kobe U.) 前川 泰則 (Yasunori Maekawa)
阪大・理学 (Osaka U.) 三浦 英之 (Hideyuki Miura)
5. Analysis of a pressure-stabilized characteristics finite element scheme for
a linearized Navier-Stokes equations ----- 51
早大・高等研 (Waseda U.) 野津 裕史 (Hirofumi Notsu)
6. Hagen-Poiseuille and thermal transpiration flows of a highly rarefied gas ----- 62
京大・工学 (Kyoto U.) 舟金 仁志 (Hitoshi Funagane)
" 高田 滋 (Shigeru Takata)
7. On the steady supersonic flow past a curved cone ----- 74
Fudan U. Yongqian Zhang

8.	Decay structure of regularity-loss type for symmetric hyperbolic systems with relaxation -----	85
	神戸大・海事科学 (Kobe U.)	上田 好寛 (Yoshihiro Ueda)
	Chinese U. Hong Kong	Renjun Duan
	九大・数理学 (Kyushu U.)	川島 秀一 (Shuichi Kawashima)
9.	Critical exponent for semilinear wave equation with time-dependent damping -----	95
	早大・政治経済学術院 (Waseda U.)	西原 健二 (Kenji Nishihara)
1 0.	Shallow water approximations for water waves over a moving bottom -----	105
	慶應大・理工 (Keio U.)	藤原 弘康 (Hiroyasu Fujiwara)
	”	井口 達雄 (Tatsuo Iguchi)
1 1.	Continuous limit of random walks and its application to approximation of nonlinear PDEs -----	122
	早大・基幹理工 (Waseda U.)	曾我 幸平 (Kohei Soga)
1 2.	Well-posedness of the Cauchy problem for the Maxwell-Dirac system in one space dimension -----	135
	京大・理学 (Kyoto U.)	岡本 葵 (Mamoru Okamoto)
1 3.	Asymptotic stability of stationary waves for symmetric hyperbolic-parabolic system in half space -----	150
	九大・数理学 (Kyushu U.)	中村 徹 (Tohru Nakamura)
	東工大・情報理工学 (Tokyo Inst. Tech.)	西畑 伸也 (Shinya Nishibata)
1 4.	A parabolic-elliptic system of drift-diffusion type in \mathbf{R}^2 for the subcritical case -----	158
	広島大・理学 (Hiroshima U.)	永井 敏隆 (Toshitaka Nagai)