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永谷宏幸，及川正行，熱対流の Manneville モデルの数値解，九州大学大学院総合理工学報告，24・3，2002, 319-322.

及川正行，丸野健一，A.Ankiewicz，N.Akhmediev，Swift-Hohenberg 型方程式の解析解の安定性，第 52 回理論応用力学講演会講演論文集 NCTAM2003，2003, 161-162.

M. Ioualalen and M. Okamura, Structure of the instability associated with harmonic resonance of short-crested waves, Journal of Physical Oceanography, 32・5, 2002, 1331-1337.

K. Sato and M. Okamura, Evaluation of mean values for a forced pendulum with a projection operator method, Progress of Theoretical Physics, 108・1, 2002, 1-12.

M. Okamura, Standing gravity waves of large amplitude in deep water, Wave Motion,37・2, 2003, 173-182.

北原洋一，岡村 誠，射影演算子法による Kuramoto-Sivashinsky 方程式の平均量，

九州大学応用力学研究所研究集会報告集，13ME-S2，2002，26-32.

岡村 誠，M. Ioualalen，C. Kharif，高調波共鳴定在波の安定性，京都大学数理解析研究所講究録，1271，2002，32-40.

北原洋一，岡村 誠，射影演算子法による Kuramoto-Sivashinsky 方程式の平均量，京都大学数理解析研究所講究録，1285，2002，219-225.

辻英一，及川正行，Modified KP 方程式のソリトン解の二次元的相互作用，京大数理解析研究所講究録,1271,2002,125-134.

辻英一，及川正行，ソリトンの斜め相互作用について，九大応用力学研究所研究集会報告,13ME-S4,2002,128-133

界面動力学
Free Surface/Interface Dynamics

教授　柏木　正, 助教授　胡　長洪
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M. Kashiwagi: First- and Second-Order Water Waves Around an Array of Floating Vertical Cylinders, Proceedings of 17th International Workshop on Water Waves and Floating Bodies (Cambridge), 2002, 73-76.

C. Hu and N. Fukuchi: A Field Modelling Approach to Predict Hot Gas Movement Induced by Marine Compartment Fires, Proceedings of 12th International Offshore and Polar Engineering Conference (Kitakyushu), Vol.4, 2002, 450-455.

M. Kashiwagi: Spatial Distribution of the Wave Around Multiple Floating Bodies, Proceedings of 12th International Offshore and Polar Engineering Conference (Kitakyushu), Vol.3, 2002, 479-486.

M. Kashiwagi: Wave-Induced Local Steady Forces on a Column-Supported Very Large

Floating Structure, Journal of Offshore and Polar Engineering, Vol.12, No.2, 2002, 98-104.

M. Kashiwagi: Spatial Distribution of the Waves among a Great Number of Cylinders at Near Trapped-Mode Frequency, Proceedings of 10th Congress of the International Maritime Association of the Mediterranean (Crete, Greece), 2002, CD-ROM.

福地信義，胡　長洪：内業工場における金属ヒュームの換気制御と労働安全性に関する研究(その１)換気流解析, 日本造船学会論文集, 第 191 号, 2002, 159-168.

M. Kashiwagi: A Flow Model for a Displacement-Type Fast Ship with Shallow Draft in Regular Waves, Proceedings of 24th International Symposium on Naval Hydrodynamics (Fukuoka), Vol.2, 2002, 181-191.

胡　長洪，柏木　正，桃木　勉：CIP 法を用いた波浪・構造物衝撃現象の数値解析, 第 15 回計算力学講演会講演論文集, 2002, 433-434.

T. Momoki, M. Kashiwagi and C. Hu: CFD Simulations of Nonlinear Waves and Interactions with a Structure, Proceedings of Techno-Ocean 2002 International Conference (Kobe), 2002, CD-Rom Paper No. T-H-2.

C. Hu and N. Fukuchi: CFD Modeling of Marine Compartment Fires, Proceedings of Techno-Ocean 2002 International Conference (Kobe), 2002, CD-Rom Paper No. T-H-3.

福地信義，鷹尾　潤，篠田岳思，胡　長洪：機関室の防火・消火対策のためのプール燃焼に関する研究（その１）プール燃焼実験，日本造船学会論文集，第 192 号, 2002, 427-437.

C. Hu and M. Kashiwagi: 2-D Numerical Simulation of Extreme Wave-Body Interactions, Proceedings of 8th Symposium on Nonlinear and Free-Surface Flows (Hiroshima), 2002, 1-4.

M. Kashiwagi and N. Higashimachi: Numerical Simulations of Transient Responses of

VLFS during Landing and Take-off of an Airplane, Proceedings of International Symposium on Ocean Space Utilization Technology (Tokyo), 2003, 83-91l.

T. Momoki, M. Kashiwagi and C. Hu: Numerical Simulations of Highly Nonlinear Interactions of Water Waves with an Offshore Structure, Transactions of The West-Japan Society of Naval Architects, Vol.105, 2003, 65-74

柏木　正： 長波長域での船体運動の漸近値について, 九州大学応用力学研究所研究集会報告, 14ME-S2, 2003, 1-6.

I. Ten and M. Kashiwagi: The Green Function for Two-Layer Fluid for 2D Problems, 九州大学応用力学研究所研究集会報告, 14ME-S2, 2003, 25-31.

胡　長洪, 柏木　正：CIP 法を用いた浮体と水波の強非線形相互作用, 九州大学応用力学研究所研究集会報告, 14ME-S3, 2003, 58-60.

東町直哉, 柏木　正：飛行機の離発着による浮体式海上空港の過渡応答数値計算, 九州大学応用力学研究所研究集会報告, 14ME-S3, 2003, 92-100.

ナノメカニックス
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K.Kakimoto, Effects of rotating magnetic fields on temperature and oxygen distributions in silicon melt, J. Crystal Growth 237-239, 2002, 1785-1790.

K. Kakimoto, A. Tashiro, T. S., H. Ishii, Y.Hashimoto, Mechanisms of heat and oxygen transfer in silicon melt in an electromagnetic Czochralski system, J. Crystal Growth 243, 2002, 55-65.

K. Kakimoto, Heat and Mass Transfer during CZ Crystal Growth: from Atomic Scale to

Macro Scale, Abstract of Fourth Asian –Pacific Conference on Aerospace Technology and Science　Edited by Wang Yankui and Chen Xuerui, 2002, 35-39.

Y. Hashimoto, A. Tashiro, T. Shinozaki, H. Ishii and K. Kawatate, Submarine cable measurements of voltage for current monitoring in the Tsushima and in the Tokara Straits, Journal of the Korean Society of Oceanography, 37, 2002, 160-168.

柿本浩一, 田代昭正, 石井秀夫, 篠崎高茂, 橋本良夫, 半導体製造プロセスにおける電磁力の応用・マクロとナノスケール融合, 第１５回計算機力学講演会講演論文集　No.02-02, 2002, 743-744.

柿本浩一, 王育人, Ｘ線回折によるシリコン融解凝固過程のその場観察, 第４７回人工結晶討論会講演要旨集, 2002, 60-70

北嶋具教, 柿本浩一, 北村健二, ２重坩堝 ACRT 法におけるＬｉＮｂＯ３融液の対流解析,　第４７回人工結晶討論会講演要旨集, 2002, 97-98.

柿本浩一、田代昭正、石井秀夫、篠崎高茂、橋本良夫, 半導体製造プロセスにおける電磁力の応用・マクロとナノスケール融合, 第１５回計算機力学講演会講演論文集　No.02-02, 2002, 743-744.

Y. R Wang, K. Kakimoto, Crystal-melt interface shape and dislocations during the melting of silicon, J. Crystal Growth, 247 (1-2), 2003, 1-12.

K. Kakimoto, A. Tashiro, H. Ishii, T. Shinozaki, Active control of convection of silicon by electromagnetic force under cusp-shaped magnetic fields, Materials Science in Semiconductor processing, 5, 2003, 341-345.

T. Kitashima, K. Kakimoto, H. Ozoe, Molecular dynamics analysis of diffusion of point defects in GaAs, J. ELECTROCHEM SOC, 150 (3), 2003, G198-G202.

柿本 浩一, 篠崎 高茂, 田代 昭正, 石井 秀夫, 電磁攪拌によるシリコン結晶育

成時の融液流動解析, 第５２回理論応用力学講演会講演論文集, NCTAM 2003, pp.523-524.

北嶋 具教, 柿本 浩一, ACRT 法を用いた時の $LiNbO_3$ の流動解析, 第５２回理論応用力学講演会講演論文集, NCTAM 2003, pp.529-530.

複合連続体力学
Heterogeneous Solid Mechanics
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W. X. Wang, Y. Takao, T. Matsubara and H.S. Kim, Improvement of the interlaminar fracture toughness of composite laminates by whisker reinforced interlamination, *Composites Science and Technology*, 62, 2002, 767-774.

Y. Takao, S. Matsunaga and W. X. Wang, The role of friction on the bearing mode failure of a pinned joint of CFRP, *Proceeding of the Tenth U.S.-JAPAN Conference on Composite Materials*, Stanford, California, Sep. 2002, 839-848.

W. X. Wang and Y. Takao, Effects of friction on the experimental evaluation of the mode II interlaminar fracture toughness of composite laminates, *Proceeding of the Third Japan-Canada Joint Conference on New Application of Advanced Composites*, Ueda, Nagano, 2003, 73-82.

黄木景二、高雄善裕、炭素繊維強化プラスチックの電気的特性とその応用、日本複合材料学会誌、28 巻、6 号、2002, 20-26.

N. Miyano, K. Ameyama and G.C. Weatherly, HRTEM Observation and Atomic Modeling of / Interface Boundary in Ti-22V4Al Alloy, Mater. Trans. JIM, 43, 2002, 1547-1551.

N. Miyano, H. Fujiwara, K. Ameyama and G.C. Weatherly, A Study of Preferred Orientation Relationships in BCC/HCP Diffusional Phase Transformations in Titanium Alloy, Materials Science and Engineering: A, 333, 2002, 85 - 91.

Naoki Miyano, Hiroshi Iwasa, Michito Matsumoto, Fumiki Kato, Kei Ameyama and Susumu Sugiyama, Fabrication of TiNi Shape Memory Alloy Micro-structures and Ceramic Micro-mold By LIGA-MA-SPS Process, MHS2002, 2002.

Naoki Miyano, Kazunori Tagaya, Kazunori Kawase, Kei Ameyama and Susumu Sugiyama, Fabrication of Alloy and Ceramics Microstructures by LIGA-MA-SPS Process, Pacific Rim Workshop on Transducers and Micro/Nano Technologies, 2002.

破壊力学
Fracture Mechanics and Materials
教授　新川和夫, 助教授　東藤貢
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森田　康之，新川　和夫，東藤　貢，位相シフトモアレ干渉法による SOJ 電子パッケージの熱ひずみ解析，実験力学，3, 1, 28-33, 2003

篠原　信之，東藤　貢，新川　和夫，ポリ乳酸のモード I 破壊挙動に及ぼす微視構造と負荷速度の影響，日本機械学会論文集（A 編），69, 677，95-101, 2003.

森田　康之，新川　和夫，東藤　貢，金戸　正行，モアレ干渉法を応用したフリップチップデバイスの熱変形解析, エレクトロニクス実装学会誌, 5, 7, 654-659, 2002

東藤　貢，新川　和夫，高橋　清，武部　博倫，森永　健次，ZrO2/Ni 複合材料の変形・破壊挙動に及ぼす分散状態の影響，51，５，489-494, 2002.

森田　康之，新川　和夫，東藤　貢，モアレ干渉法による QFP，MCM 電子デ

バイスの熱変形計測と FEM 解析，実験力学，２，１，39-43, 2002.

小松治男，清水哲雄，馬田俊夫，佐藤正矩，新川和夫，衝撃を受けるゴルフボールの動的接触時間計測，実験力学, 2, 3, 183-188, 2002.

M. Todo, N. Shinohara and K. Arakawa, Effects of Crystallization and Loading-rate on the Mode I Fracture Toughness of Biodegradable Poly(lactic acid), Journal of Materials Science Letters, 21, 1203-1206, 2002.

K. Arakawa and T. Mada, Fracture Energy Measurement in Viscoelastic Material Proc. of the SEM Annual Conference & Exposition on Experimental Mechanics and Applied Mechanics, 2002 (CD-ROM)

M. Todo, S. Komeda and K. Arakawa, Effect of Rubber Blending on the Fracture Behavior of Glass Microballoon Filled Epoxy Resin, Proceedings of the Third Japan-Korea Joint Symposium on Composite Materials, 75-76, 2002.

S. Ravi, M. Todo, K. Arakawa and K. Takahashi, Effect of Annealing on the Fracture Behavior of Polyethylene, Proceedings of the 14th Bienniel Conference on Fracture, 35-42, 2002.

M. Todo, N. Shinohara, K. Arakawa and K. Shankar, Effect of Crystallization on the Mode I Fracture Behavior of Biodegradable Poly(lactic acid), Proceedings of 3rd Asian International Symposium on Biomaterials and Drug Delivery Systems, 335-338, 2002.

地球流体力学
Geophysical Fluid Dynamics
教授　和方吉信　助教授　伊賀啓太
Professor Yoshinobu Wakata, Associate Professor Keita Iga

Y. Wakata and S. Kitaya, Annual variability of sea surface height and upper layer

thickness in the Pacific Ocean, Journal of Oceanography, 58・3, 2002, 439-450.

M. Ioualalen, Y. Wakata, Y, Kawahara, Y. Gouriou and D. Varillon, Variability of the sea surface salinity (SSS) in the western tropical Pacific: On the ability of an OGCM to simulate the SSS, and on the sampling of an operating merchant ship SSS network, Journal of Oceanography, 59・1, 2003, 105-111.

中村 彰呉, 伊賀 啓太, 伊ヶ崎 英雄, 大気大循環モデル中の中間規模東進波に伴う速度場擾乱とジオポテンシャルハイト場擾乱,九州大学大学院総合理工学報告, 24・3, 2002, 323-326.

海洋大気力学

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Atmospheric Dynamics

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Professor Itsushi Uno, Associate Professor Masakazu Tatsuno, Research Associate Toshihiko Takemura

M. Uematsu, A. Yoshikawa, H. Muraki, K. Arao, and I. Uno, Transport of mineral and anthropogenic aerosols during a Kosa event over East Asia, Journal of Geophysical Research,107・D7, 2002, 10.1029/2001JD000333.

神田学、張翔雲、鵜野伊津志、川島茂人、高橋裕一、平野元久、地域気象モデルによる花粉飛散の数値シミュレーション、天気、49・4、2002、267-277.

M. Zhang, I. Uno, S. Sugata, Z. Wang, D. Byun, Numerical study of boundary layer ozone transport and photochemical production in east Asia in wintertime, Geophysical Research Letters,　29・11, 2002,10.1029/2001GL014368, 40-1～40-4.

N. Sugimoto, I. Matsui, A. Shimizu, I. Uno, K. Asai, T. Endoh, T. Nakajima, Observation of dust and anothropogenic aerosol plumes in the Northwest Pacific with a two-wavelength polarization lidar on board the research vessel Mirai, Geophysical Research Letters, 29・19, 1901, 2002, doi:10.1029/2002GL015112.

Z. Wang, H. Akimoto, I. Uno, Neutralization of soil aerosol and its impact on the distribution of acid rain over east Asia: Observations and model results, Journal of

Geophysical Research, 107・D19, 4389, 2002, doi:10.1029/2001JD001040.

杉本伸夫、清水厚、松井一郎、鵜野伊津志、荒生公雄、陳岩、連続運転偏光ライダーネットワークによる黄砂の動態把握、地球環境、7・2, 2002, 197 207.

原由香里、佐竹晋輔、鵜野伊津志、ダスト輸送モデルを用いた東アジア域の近年の黄砂現象の解析、地球環境、7・2, 2002, 215-224.

鵜野伊津志、アジアスケールの越境物質輸送モデリング、大気環境学会誌、38・1, 2003, 1-12.

鵜野伊津志、天野宏欣、木下紀正、荒生公雄、村山利幸、松井一郎、杉本伸夫、地域気象モデルと結合した黄砂輸送モデルの開発と１９９８年４月の黄砂シミュレーション、天気、50・1, 2003, 17-29.

吉田保衡、鵜野伊津志、木下紀正、小山田　恵、火山ガスの３次元流れの追跡：ラグランジュ粒子モデルの応用、南太平洋海域調査研究報告「列島火山の噴煙活動を探る」木下紀正編、37, 2003, 98-105.

M. Uematsu, Z. Wang, I. Uno, Atmospheric input of mineral dust to the western North Pacific region based on direct measurements and a regional chemical transport model, Geophysical Research Letters, 30・6, 1342, 2003, doi:10.1029/2002GL016645.

辰野正和，中塚志保，石井幸治，谷のある山岳モデルをすぎる安定成層流の可視化実験，第１７回風工学シンポジウム論文集，2002, 131-136.

M. Tatsuno, Y. Hamada, K. Ishi-I, H. Amamoto and T. Karasudani, Mechanism of the Generation of Lift Forces on Each of Two Cylinders in a tandem Arrangement at the Critical Reynolds Number Regime, Proc. Con. Bluff Body Wakes and Vortex-Induced Vibrations, Port Douglas, Australia, 2002, 97-100.

辰野正和，浜田義勝，石井幸治，烏谷隆，天本肇，臨界レイノルズ数領域にお

ける直列２円柱の揚力発生機構，応用力学研究所所報，124，2003, 1-8.

T. Takemura, I. Uno, T. Nakajima, A. Higurashi, and I. Sano, Modeling study of long-range transport of Asian dust and anthropogenic aerosols from East Asia, Geophysical Research Letters, 29・24, 2002, 2158, doi:10.1029/2002GL016251.

T. Takemura, Simulation of global aerosol transport-radiative processes based on atmospheric general circulation model, Proceedings EarthCARE Workshop, 2002, 187-190.

T. Takemura, and T. Nakajima, Global distributions of aerosol optical properties simulated with the SPRINTARS, AMS 11th Conference on Atmospheric Radiation, 2002, 113-116.

大気流体工学
Wind Engineering
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内田孝紀，大屋裕二；3 次元数値モデルによる九大新キャンパスの風況シミュレーション, 九州大学情報基盤センター　情報基盤センター年報, 2, 2002, 99-106.

Y. Ohya and T. Uchida; Laboratory and numerical studies of very stable boundary layers, Proc. of 15th Symp. on Boundary Layers and Turbulence, Wagenningen, 2002, 307-310.

井上雅弘，桜井　晃，大屋裕二；つば付きディフューザ風車の簡易理論，ターボ機械，30･8，2002，497-502.

R. Ohba, T. Hara, S. Nakashima, Y. Ohya and T. Uchida; Gas diffusion over an isolated hill under neutral, stable and unstable conditions, Atmospheric Environment, 36, 2002, 5697-5707.

大屋裕二，内田孝紀，杉谷賢一郎，渡辺公彦；リニア―な鉛直温度分布を有する安定境界層の風洞実験，九州大学応用力学研究所所報，123，2002，53-65.

内田孝紀，藤井　斉，大屋裕二；ネストグリッドを用いた複雑地形上の風況予測シミュレーション，日本風工学会誌，92，2002，135-144.

内田孝紀，大屋裕二；急峻な２次元山からの非定常な渦放出に対する数値的考察，応用力学論文集，5，2002，735-742.

大屋裕二；温度成層風洞，ながれ，21，2002，437-446.

大屋裕二，烏谷 隆，桜井　晃；つば付きディフューザー風車による風力発電の高出力化，日本航空宇宙学会誌，50･587, 2002, 477-482.

内田孝紀，杉谷賢一郎，大屋裕二；一様流中の 2 次元崖状地形まわりの気流性状に関する実験的研究，日本風工学会論文集，95，2003，233-244.

Y. Ohya and T. Uchida; Turbulence structure of stable boundary layers with a near-linear temperature profile, Boundary Layer Meteorology, 108･1, 2003, 19-38.

T. Uchida and Y. Ohya; Large-eddy simulation of turbulent airflow over complex terrain, J. Wind Eng. Ind. Aerodyn., 91, 2003, 219-229.

烏谷　隆，茶木田　浩，深町信尊，渡辺公彦，大屋裕二；つば付きベンチュリー型集風装置を備えた風力発電機の特性，Proceedings, 2002 Meeting of Japan Society of Fluid Mechanics, 2002,110-111.

鳥谷　隆，丸林賢次，石橋道芳，渡辺公彦；対馬・志賀島における二酸化炭素の計測，九州大学応用力学研究所所報，124，2003，39-41.

内田孝紀，大屋裕二；安定成層流体中の地形効果に関する数値的研究　―急峻

な孤立峰の場合―，九州大学応用力学研究所所報，124, 2003，9-16.

T. Uchida and Y. Ohya;Stable stratification effect on the separated and reattaching flow behind two-dimensional topography, 九州大学応用力学研究所所報，124，2003，17-24.

内田孝紀, 杉谷賢一郎，大屋裕二；３次元数値モデルによる九大新キャンパスの風況予測シミュレーション　―第 2 報建物群まわりの風環境予測―，九州大学情報基盤センター年報，3, 2003，57-66.

内田孝紀, 大屋裕二；安定成層場における山越え気流の三次元数値シミュレーション　―非定常な剥離―再付着流れに対する安定成層の効果―，ながれ，22, 2003，65-78.

海洋循環力学
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T. Senjyu, T. Aramaki, S. Otosaka, O. Togawa, M. Danchenkov, E. Karasev and Y. Volkov,
Renewal of the bottom water after the winter 2000-2001 may spin-up the thermohaline circulation in the Japan Sea, Geophys. Res. Lett., 29・7, 2002, 53・1-4.

A. Isobe, M. Ando, T. Watanabe, T. Senjyu, S. Sugihara and A. Manda, Freshwater and temperature transports through the Tsushima-Korea Straits, J. Geophys., Res., 107・C7, 2002, 2・1-20.

千手智晴，渡辺俊輝，繁永裕司，日本海山陰沿岸水温にみられる十年スケール

変動，月刊海洋「北太平洋の十年変動－物理・化学・生物の接点を求めて－」，391, 2003, 59-64.

S.R. Balotro, A.Isobe, M.Shimizu, A.Kaneda, T.Takeuchi and H.Takeoka, Circulation and material transport in Suo-Nada during spring and summer season, J.Oceanogr., 58・6 , 2002, 759-773.

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K. Ichikawa and K. Suito, Capability of the complex EOF analysis - with demonstrations to the NCEP data, 九州大学総合理工学報告 (Engineering Sciences Reports, Kyushu University), 24・1, 2002, 23-28.

竹内宗之, 今脇資郎, 馬谷紳一郎, 山田勝久, 内田裕, 深澤理郎, 係留 ADCP で観測された四国沖の黒潮と沿岸側低気圧性渦の流速構造, 九州大学応用力学研究所所報, 123, 2002, 29-38.

鹿島基彦, 今脇資郎, 馬谷紳一郎, 内田裕, 橋部雄志, 市川洋, 深澤理郎, 四国沖黒潮域の中深層における地衡流平衡の検証, 九州大学応用力学研究所所報, 123, 2002, 39-51.

K. Ichikawa and A. Kaneda, Spatial representability of coastal sea level variations near the Kuroshio, Proceedings of PORSEC-2002, 2002, 7-10.

X.-H. Zhu, I.-S. Han, H. Ichikawa, A. Kaneko, J.-H. Park, A. Ostrovskii, N. Gohda, S. Umatani, Observation of current and eddy activity east of Okinawa Island, Proceedings of PORSEC-2002, 2002, 11-15.

J. W. Book, M. Wimbush, S. Imawaki, H. Ichikawa, H. Uchida and H. Kinoshita,

Kuroshio temporal and spatial variations south of Japan, determined from inverted-echo-sounder measurements, Journal of Geophysical Research, 107・C9, 2002, 4・1-12, (3121, doi: 10.1029/2001JC000795).

市川香, 宇宙から測る海面の凹凸で渦や黒潮をみる,「宇宙からみる地球の姿」, 第 16 回「大学と科学」公開シンポジウム講演収録集, 2003, 105-114.

H. Uchida and S. Imawaki, Eulerian mean surface velocity field derived by combining drifter and satellite altimeter data, Geophysical Research Letters, 30・C5, 2003, 33・1-4, (1229, doi:10.1029/2002GL016445).

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H.Kajiwara, W.Koterayama, S.Yamaguchi and T.Yokobiki, Rubust Control System Design for a Towed Underwater Vehicle, Proc. of the 2002 Int. Symposium On Underwater Technology, 2002, 213-216.

T.Ikebuchi, N.Tatatsu, T.Kita, N.Okada, W.Koterayama, M.Nakamura, S.Fujii and K.Sato, A New Wave Monitoring System on the Ocean Platform "COMPASS", Proc. of the 12th Int. Offshore and Polar Engineering Conference, Vol.2, 2002, 124-129.

H.I.Park, Y.P.Hong, M.Nakamura and W.Koterayama, An Experimental Study on Transverse Vibrations of a Highly Flexible Free Hanging Pipe in Water, Proc. of the 12th Int. Offshore and Polar Engineering Conference, Vol.2, 2002, 199-206.

D.H.Jung, H.I.Park and W.Koterayama, A Numerical and Experimental Study on Dynamics of a Towed Low-Tension Cable, Proc. of the 12th Int. Offshore and Polar Engineering Conference, Vol.2, 2002, 213-220.

O.Nagatomi, M.Nakamura and W.Koterayama, Dynamic Simulation and Field Experiment of Submarine Cable during Laying and Recovery, Proc. of the 12th Int. Offshore and Polar Engineering Conference, Vol.2, 2002, 255-262.

S.Yamaguchi, H.Matsui and W.Koterayama, Development of a Roll Control Fin for Observation Towed Vehicles, Proc. of the 12th Int. Offshore and Polar Engineering Conference, Vol.2, 2002, 263-268.

G.Rui, H.Kajiwara, E.Kondo, W.Koterayama and M.Nakamura, Depth Control of an Underwater Vehicle Using Liner Parameter-Varying Techniques, Proc. of the 12th Int. Offshore and Polar Engineering Conference, Vol.2, 2002, 301-306.

W.Koterayama, M.Nakamura, K.Sato and T.Ikebuchi, Model- and Field- Experiments on a Wave Observation Buoy, Proc. of the 12th Int. Offshore and Polar Engineering Conference, Vol.3, 2002, 431-437.

W.Koterayama, M.Nakamura and S.Yamaguchi, Underwater Vehicles and Buoy System Developed for Ocean Observations in the Research Institute for Applied Mechanics, Kyushu University, Proc. of the 5th Int. Pacific/Asia Offshore Mechanics Symp., 2002, 13-20.

M.Nakamura, H.Kajiwara, H.Oda and T.Yoneyama, “Diving Beetle”- Testbed for AUV Control Development, Proc. of the 5th Int. Pacific/Asia Offshore Mechanics Symp., 2002, 36-42.

S.Yamaguchi , T.Kawanami and W.Koterayama, A Study on Shape Optimization for an Underwater Vehicle Based on Numerical Simulation, Proc. of the 5th Int. Pacific/Asia Offshore Mechanics Symp., 2002, 43-48.

R.Gao, H.Kajiwara, E.Kondo, W.Koterayama and M.Nakamura, Gain-Scheduled Control of an Underwater Vehicle using Quasi-LPV Techniques, Proc. of the 5th Int. Pacific/Asia Offshore Mechanics Symp., 2002, 108-115.

Y.P.Hong, M.Nakamura and W.Koterayama, An Experimental and Numerical Study on Dynamics of Flexible Free Hanging Riser, Proc. of the 5th Int. Pacific/Asia Offshore Mechanics Symp., 2002, 131-137.

W.Koterayama, M.Nakamura, K.Sato and T.Ikebuchi, Model- and Field- Experiments on a Wave Observation Buoy, Int. Journal of Offshore and Polar Engineering, Vol.13, No.1, 2003, 22-28.

R.Gao, E.Kondo, H.Kajiwara, W.Koterayama and M.Nakamura, Depth Control of an Underwater Vehicle Using Linear Parameter-varying Techniques, Int. Journal of Offshore and Polar Engineering, Vol.13, No.1, 2003, 52-59.

プラズマ・材料力学

Plasma and Material Science

高エネルギープラズマ
High Energy Plasma Physics

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S.-I. Itoh, K. Itoh, M. Yagi, M. Kawasaki and A. Kitazawa, Transition in multiple-scale-lengths turbulence in plasmas, Physics of Plasmas,9・5, 2002, 1947-1954.

A. Furuya, S.-I. Itoh and M. Yagi, Effect of Microscopic Turbulence on Magnetic Island, Journal of the Physical Society of Japan,71・5, 2002, 1261-1267.

M. Kawasaki, S.-I. Itoh, M. Yagi and K. Itoh, Stochastic Transition between Turbulent Branch and Thermodynamic Branch of an Inhomogeneous Plasma, Journal of the Physical Society of Japan,71・5,2002,1268-1273.

K. Itoh and S.-I. Itoh, Transient response of transport at transport barrier formation, Plasma Physics and Controlled Fusion,44・Supplement 5A,2002, A367-A372.

M. Kawasaki, A. Furuya, M. Yagi, K. Itoh and S.-I. Itoh, Transition probability to turbulent transport regime, Plasma Physics and Controlled Fusion,44・Supplement 5A, 2002,A473-A478.

S.-I. Itoh, A. Kitazawa, M. Yagi, and K. Itoh, Bifurcation and phase diagram of turbulence constituted from three different scale-length modes, Plasma Physics and

Controlled Fusion, 44・7, 2002, 1311-1328.

S.-I. Itoh, K. Itoh, and S. Toda, Probability of Statistical L-H Transition in Tokamaks, Physical Review Letters,89・21, 2002, 215001 (1-4).

M. Uchida, A. Fukuyama, K. Itoh, S.-I. Itoh and M Yagi, Analysis of current diffusive ballooning mode including kinetic effects, Plasma Phys. Control. Fusion, 44・12, 2002, 2495-2511.

A. Furuya, M. Yagi and S.-I. Itoh, Linear Analysis of Neoclassical Tearing Mode based on the four-field reduced neoclassical MHD equations, Journal of the Physical Society of Japan, 72・2 , 2003, 313-319.

A. I. Smolyakov, M. Yagi, Y. Kishimoto and R. Sydora, Short Wavelength Temperature Gradient Driven Modes in Tokamak Plasmas, Phys. Rev. Lett., 89・12, 2002, 125005(1-4).

N. Masanori, H. Takehiro, S.Kohmi, Y. Yukihiko, N. Hiroshi, Y. Masatoshi, U.Kiichiro and M. Katsunori One-Dimensional Simulation of Photo-Detached Electrons in Negative Ion Plasmas, Journal of Plasma and Fusion Research, 79・3, 2003, 274-281.

M. Yagi, S.-I. Itoh, M. Kawasaki, K. Itoh and A. Fukuyama, Multiple-Scale Turbulence and Bifurcation, 19th IAEA Fusion Energy Conference, IAEA-CN-94/TH/1-4, 2002.

S.-I. Itoh, K. Itoh and S. Toda, Statistical Theory of L-H Transition and its Implication to Threshold Database, 19th IAEA Fusion Energy Conference, IAEA-CN-94/PD/P-04, 2002.

A. I. Smolyakov, M. Yagi, Y. Kishimoto and R. Sydora, Short Wavelength Temperature Gradient Driven Modes in Tokamak Plasmas, 19th IAEA Fusion Energy Conference, IAEA-CN-94/TH/P1-14, 2002.

H. Naitou, T. Kobayashi, M. Yagi, T. Matsumoto, S. Tokuda and K. Kishimoto, Kelvin-

Helmholtz Instability and Kinetic Internal Kink Modes in Tokamaks, 19th IAEA Fusion Energy Conference, IAEA-CN-94/TH/P2-09, 2002.

伊藤公孝, 伊藤早苗, 矢木雅敏, 揺らぎの非局所性にかかわる理論的背景, Journal of Plasma and Fusion Research, 78・9, 2002, 857-912.

M. Yagi, 構造形成とドリフト波／MHD 乱流, Journal of Plasma and Fusion Research, 78・11, 2002, 1253.

U. Stroth, K. Itoh and S.-I. Itoh, Physics of bifurcations in toroidal plasmas, Bifurcation Phenomena in Plasmas (Kyusyu University, Edited by Sanae-I.Itoh and Yoshinobu Kawai), 2002, 239-253.

A. Fukuyama, K. Itoh, S.-I. Itoh and M. Yagi, Bifurcation in transport barrier formation, Bifurcation Phenomena in Plasmas (Kyusyu University, Edited by Sanae-I.Itoh and Yoshinobu Kawai), 2002, 297-315.

A. Furuya, S.-I. Itoh and M. Yagi, On the finite amplitude magnetic island as a bifurcated state, Bifurcation Phenomena in Plasmas (Kyusyu University, Edited by Sanae-I.Itoh and Yoshinobu Kawai), 2002, 368-380.

M. Kawasaki, S.-I. Itoh, M. Yagi and K. Itoh, Stochastic transition between turbulent branch and thermodynamic branch, Bifurcation Phenomena in Plasmas (Kyusyu University, Edited by Sanae-I.Itoh and Yoshinobu Kawai), 2002, 381-392.

K. Itoh, S.-I. Itoh, A. Fukuyama, M. Yagi, S. Toda and M. Kawasaki, Modeling of bifurcations in magnetic confinement plasmas, Bifurcation Phenomena in Plasmas (Kyusyu University, Edited by Sanae-I.Itoh and Yoshinobu Kawai), 2002, 416-472.

S.-I. Itoh and K. Itoh, From Dressed Particle to Dressed Mode in Plasmas, ANNALS OF THE UNIVERSITY OF CRAIOVA PHYSICS AUC ,Vol. 12 (part 1), 2002, 4-12.

A. Yoshizawa, S.-I. Itoh, K. Itoh, PLSMA AND FLUID TURBULENCE　Theory and

Modelling, Institute of Physics Publishing, 2003.

伊藤早苗、矢木雅敏 共訳, トカマク概論, J.A.Wesson 編著、九州大学出版会, 2003.

S.-I.Itoh and Y. Kawai, Bifurcation Phenomena in Plasmas, Kyusyu University, 2002.

S.-I. Itoh, A. Kitazawa, M. Yagi and K. Itoh, Bifurcation and Phase Diagram of Turbulence Constituted from Three Different Scale-length Modes, NIFS-726 , 2002.

S.-I. Itoh and K. Itoh, From Dressed Particle to Dressd Mode in Plasmas, NIFS-730, 2002.

S.-I.Itoh, K.Itoh and S.Toda, Probability of Statistical L-H Transition in Tokamaks, NIFS-739, 2002.

M. Yokoyama, K. Itoh, S. Okamura, K. Nakajima, S.-I. Itoh, G.H. Neilson, M.C. Zarnstorff and G. Rewoldt, Drift Reversal Capability in Helical Systems, NIFS-756, 2002.

M.Yagi, S.-I.Itoh, M.Kawasaki, K.Itoh and A.Fukuyama, Multiple-Scale Turbulence and Bifurcaion, NIFS-768, 2003.

S.-I.Itoh, K.Itoh and S.Toda, Statistical Theory of L-H Transition and its Implication to Threshold Database, NIFS-769, 2003.

S.-I. Itoh, K. Itoh and S. Toda, Statistical Theory of L-H Transition in Tokamaks, NIFS-771, 2003.

T. Okawauchi, S.-I. Itoh and M. Yagi, Study on MHD and Transport in Burning Plasmas, Report of Research Institute for Applied Mechanics, 123, 2002, 1-19.

北沢充弘, 矢木雅敏, 伊藤早苗, PC クラスタの性能評価と今後の計算機シミュ

レーション (Performance and Effciency of PC Cluster for Computer Simulation), 九州大学情報基盤センター年報, 3, 2003, 15-20.

矢木雅敏、北澤充弘、伊藤早苗, 情報基盤センターの今後を考える, 九州大学情報基盤センター広報, 2・3, 2002, 173-176.

M. Yagi and P. Diamond, Proceedings of Symposium on 'Transport and Structural Formation' combined with US/Japan JIFT workshop 'Structural Formation and Drift/MHD turbulence', Report of Research Institute for Applied Mechanics, Kyushu University, Supplements No. S-1, 2003.

高エネルギー材料物性
High Energy Solid State Physics

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T. Onitsuka, M. Takenaka, E. Kuramoto, Y. Nagai and M. Hasegawa, Deformation-Enhanced Cu Precipitation in Fe-Cu Alloy Studied by Positron Annihilation Spectroscopy, Phys. Rev. B, Vol.65 (2002) 012204-1 ~ 012204-4.

K. Sato, T. Yoshiie, Y. Satoh, Q. Xu, E. Kuramoto and M. Kiritani, Point Defect Production under High Internal Stress without Dislocations in Ni and Cu, Rad. Eff. Def. Sol., Vol.157, (2002) 171-178.

E. Kuramoto, K. Ohsawa and T. Tsutsumi, Computer Simulation of Fundamental Behaviors of Point Defects, Clusters and Interaction with Dislocations in Fe and Ni, Compt. Mod. Eng. Sci., Vol.3, No.2 (2002) 193-200.

E. Kuramoto, K. Ohsawa and T. Tsutsumi, Study of Fundamental Features of Bias Effect in Metals under Irradiation, J. Nucl. Mat., Vol.307-311 (2002) 982-987.

蔵元英一, 結晶中の照射欠陥の基礎的挙動とバイアス効果, 日本物理学会, 58 巻, 3 号, (2003) 158-165.

S. Nagata, B. Tsuchiya, N. Ohtsu, T. Sugawara, T. Shikama, K. Tokunaga, M. Takenaka and E. Kuramoto, Hydrogen and Deuterium Uptake in Helium Implanted Layer of Mo and W, J. Nucl. Mat., Vol.313-316 (2003) 279-283.

極限構造材料
Extreme-Circumstances Structural Materials

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H. Kawamura, H. Takahashi, N. Yoshida, V. shestakov, Y. Ito, M. Uchida, H. Yamada, M. Nakamichi and E. Ishitsuka, Application of Beryllium Intermetallic Compounds to Neutron Multiplier of Fusion Blanket, Fusion Enjineering and Design, 61-62, 2002, 391-397.

K. Tokunaga, R.P. Dorner, R. Seraydarian, N. Noda, N. Yoshida, T. Sogabe, T. Kato and B. Scheder, Modification of Tungsten Coated Carbon by Low Energy and High Flux Deuterium Irradiation, Journal of Nuclear Materials, 307-311, 2002, 126-129.

K. Tokunaga, O. Yoshikawa, K. Makise and N. Yoshida, Effects of Helium Irradiation on High Heat Load Properties of Tungsten, Journal of Nuclear Materials, 307-311, 2002, 130-134.

H. Iwakiri, K. Morishita and N. Yoshida, Effects of Helium Bombardment on the Deuterium Behavior in Tungsten, Journal of Nuclear Materials, 307-311, 2002, 135-138.

H. Watanabe, D.J.Edwards, Y. Aono and N. Yoshida, Microstructure of Neutron Irradiated SS316L/DS-Cu Joint, Journal of Nuclear Materials, 307-311, 2002, 335-338.

H. Watanabe, T. Muroga and N. Yoshida, Effects of Temperature Change on Vanadium Alloys Irradiated in HFIR, Journal of Nuclear Materials, 307-311, 2002, 403-407.

H. Watanabe, M. Suda, T. Muroga and N. Yoshida, Oxide Formation of a Purified V-4Cr-4Ti Alloy during Heat Treatment and Ion Irradiation, Journal of Nuclear Materials, 307-311, 2002, 408-411.

M. Hatakeyama, H. Watanabe, M. Akiba and N. Yoshida, Low Void Swelling in Dispersion Strengthened Copper Alloys under Single-ion Irradiation, Journal of Nuclear Materials, 307-311, 2002, 444-459.

A. Kimura, R. Kasada, K. Morishita, R. Sugano, A. Hasegawa, K. Abe, T. Yamamoto, H. Matsui, N. Yoshida, B.D. Wirth and T.D. Rubia, High Resistance to Helium Embrittlement in Reduced Activation Martensitic Steels, Journal of Nuclear Materials, 307-311, 2002, 521-526.

M. Miyamoto, T. Hirai, K. Tokunaga, T. Fujiwara and N. Yoshida, Effect of Substrate Temperature on Microstructure and Deuterium Retention of Molybdenum Co-deposition with Oxygen, Journal of Nuclear Materials, 307-311, 2002, 710-714.

M. Matsuyama, T. Murai, K. Yoshida, K. Watanabe, H. Iwakiri and N. Yoshida, Studies on Retention of Tritium Implanted into Tungsten by β -ray-induced X-ray Spectrometry, Journal of Nuclear Materials, 307-311, 2002, 729-734.

S. Tamura, K. Tokunaga and N. Yoshida, High Heat Load Properties of High Purity CVD Tungsten, Journal of Nuclear Materials, 307-311, 2002, 735-738.

R. Sugano, K. Morishita, H. Iwakiri and N. Yoshida, Effects of Dislocation on Thermal Helium Desorption form Iron and Ferritic Steel, Journal of Nuclear Materials, 307-311, 2002, 941-945.

T. Sugiyama, Y. Morimoto, K. Iguchi, K. Okuno, M. Miyamoto, H. Iwakiri and N.

Yoshida, Effects of Helium Irradiation on Chemical Behavior of Energetic Deuterium in SiC, Journal of Nuclear Materials, 307-311, 2002, 1080-1083.

松山政夫、吉田勝彦、渡辺国昭、岩切宏友、吉田直亮、He 予照射タングステンにイオン注入したトリチウムの熱的挙動、富山大学水素同位体科学研究センター研究報告 21, 2002, 27-37.

M. Miyamoto, K. Tokunaga, T. Fujiwara, N. Yoshida, TRIAM group, Y. Morimoto, T. Sugiyama and K. Okuno, Material Properties of Co-deposition Formed on Plasma Facing Materials in All-metal Machine TRIAM-1M, Journal of Nuclear Materials, 313-316, 2003, 82-86.

K. Tokunaga, R.P.Doerner, R. Seraydarian N. Noda, Y. Kubota, N. Yoshida, T. Sogabe, T. Kato and B. Schedler, Surface Morphology and Helium Retention on Tungsten Exposed to Low Energy and High Flux Helium Plasma, Journal of Nuclear Materials, 313-316, 2003, 92-96.

Y. Kubota, N. Noda, A. Sagara, H. Suzuki, S. Masuzaki, K. Tokunaga, T. Satow, K. Yamazaki and O. Motojima, Investigation of the Trapped Helium and Hydrogen Ions in Plasma Facing Materials for LHD Using Thermal Desorption Spectrometer and Alternating Glow Discharge Cleanings, Journal Nuclear Materials, 313-316, 2003, 239-244.

S. Tamura, K. Tokunaga and N. Yoshida, Damage Process of Resolidified Part on CVD-W Coated Molybdenum under High Heat load, Journal of Nuclear Materials, 313-316, 2003, 250-254.

Y. Kubota, N. Noda, A. Sagara, H. Suzuki, S. Masuzaki, K. Tokunaga, T. Satow, K. S. Nagata, B. Tsuchiya, N. Ohtsu, T. Sugawara, T. Shikama, K. Tokunaga, M. Takenaka and E. Kuramoto, Hydrogen and Deuterium Uptake in Helium Implanted Layer of Mo and W, Journal Nuclear Materials, 313-316, 2003, 279-283.

プラズマ表面相互作用
Plasma Surface Interaction

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O. Motojima, N. Ohyabu, A. Komori, O. Kaneko, H. Yamada, K. Kawahata, Y. Nakamura, K. Ida, T. Akiyama, N. Ashikawa, W. A. Cooper, A. Ejiri, M. Emoto, N. Ezumi, H. Funaba, A. Fukuyama, P. Goncharov, M. Goto, H. Idei, K. Ikeda, S. Inagaki, M. Isobe, S. Kado, H. Kawazome, K. Khlopenkov, T. Kobuchi, K. Kondo, A. Kostrioukov, S. Kubo, R. Kumazawa, Y. Liang, J. F. Lyon, A. Mase, S. Masuzaki, T. Minami, J. Miyazawa, T. Morisaki, S. Morita, S. Murakami, S. Muto, T. Mutoh, K. Nagaoka, Y. Nagayama, N. Nakajima, K. Nakamura, H. Nakanishi, K. Narihara, Y. Narushima, K. Nishimura, N. Nishino, N. Noda, T. Notake, H. Nozato, S. Ohdachi, Y.Oka, H. Okada, S.Okamura, M.Osakabe, T.Ozaki, B.J.Peterson, A. Sagara, T. Saida, K. Saito, S. Sakakibara, M. Sakamoto, R. Sakamoto, M. Sasao, K. Sato, M. Sato, T. Seki, T. Shimozuma, M. Shoji, H. Suzuki, Y. Takeiri, N. Takeuchi, N. Tamura, K. Tanaka, M. Y. Tanaka, Y. Teramachi, K. Toi, T. Tokuzawa, Y. Tomota, Y. Torii, K. Tsumori, K. Y. Watanabe, T. Watari, Y. Xu, I. Yamada, S. Yamamoto, T. Yamamoto, M. Yokoyama, S. Yoshimura, Y. Yoshimura, M. Yoshinuma, N. Asakura, T. Fujita, T. Fukuda, T. Hatae, S. Higashijima, A. Isayama, Y. Kamada, H. Kubo, Y. Kusama, Y. Miura, T. Nakano, H. Ninomiya, T. Oikawa, N. Oyama, Y. Sakamoto, K. Shinohara, T. Suzuki, H. Takenaga,K. Ushigusa, T. Hino, M. Ichimura, Y. Takase, F. Sano, H. Zushi, T. Satow, S. Imagawa, T. Mito, I. Ohtake, T. Uda, K. Itoh, K. Ohkubo, S. Sudo, K. Yamazaki, K. Matsuoka, Y. Hamada, M. Fujiwara,Recent Advance in LHD Experiment, in Proc. 19th IAEA Fusion Energy Conf. (Lyon, 2002), IAEA-CN-94/OV/1-6.

Y. Takase, S. Ide, S. Itoh, O. Mitarai, O. Naito, T. Ozeki, Y. Sakamoto, S. Shiraiwa, T. Suzuki, S. Tanaka, T. Taniguchi, M. Aramasu, T. Fujita, T. Fukuda, X. Gao, M. Gryaznevich, K. Hanada, E. Jotaki, Y. Kamada, T. Maekawa, Y. Miura, K. Nakamura, T. Nishi, H. Tanaka, K. Ushigusa, and the JT-60 Team, Formation of An Advanced Tokamak Plasma without the Use of Ohmic Heating Solenoid in JT-60U, in Proc. 19th IAEA Fusion Energy Conf. (Lyon, 2002), IAEA-CN-94/PD/T-2.

K. Tokunaga, R.P. Dorner, R. Seraydarian, N. Noda, N. Yoshida, T. Sogabe, T. Kato and B. Scheder, Modification of Tungsten Coated Carbon by Low Energy and High Flux Deuterium Irradiation, Journal of Nuclear Materials, 307-311, 2002, 126-129.

K. Tokunaga, O. Yoshikawa, K. Makise and N. Yoshida, Effects of Helium Irradiation on High Heat Load Properties of Tungsten, Journal of Nuclear Materials, 307-311, 2002, 130-134.

M. Miyamoto, T. Hirai, K. Tokunaga, T. Fujiwara and N. Yoshida, Effect of Substrate Temperature on Microstructure and Deuterium Retention of Molybdenum Co-deposition with Oxygen, Journal of Nuclear Materials, 307-311, 2002, 710-714.

S. Tamura, K. Tokunaga and N. Yoshida, High Heat Load Properties of High Purity CVD Tungsten, Journal of Nuclear Materials, 307-311, 2002, 735-738.

N. Yoshida, M. Miyamoto, K. Tokunaga, H. Iwakiri, H. Wakimoto, T. Fujiwara and the TRIAM group, Microscopic Damage of Metals Exposed to the Helium Discharges in TRIAM-1M Tokamak and its Impact on Hydrogen Recycling Process, in Proc. 19th IAEA Fusion Energy Conf. (Lyon, 2002), IAEA-CN-94/FT/P1-16.

M. Miyamoto, K. Tokunaga, T. Fujiwara, N. Yoshida, TRIAM group, Y. Morimoto, T. Sugiyama and K. Okuno, Material Properties of Co-deposition Formed on Plasma Facing Materials in All-metal Machine TRIAM-1M, Journal of Nuclear Materials, 313-316, 2003, 82-86.

K. Tokunaga, R.P.Doerner, R. Seraydarian N. Noda, Y. Kubota, N. Yoshida, T. Sogabe,

T. Kato and B. Schedler, Surface Morphology and Helium Retention on Tungsten Exposed to Low Energy and High Flux Helium Plasma, Journal of Nuclear Materials, 313-316, 2003, 92-96.

Y. Kubota, N. Noda, A. Sagara, H. Suzuki, S. Masuzaki, K. Tokunaga, T. Satow, K. Yamazaki and O. Motojima, Investigation of the Trapped Helium and Hydrogen Ions in Plasma Facing Materials for LHD Using Thermal Desorption Spectrometer and Alternating Glow Discharge Cleanings, Journal Nuclear Materials, 313-316, 2003, 239-244.

S. Tamura, K. Tokunaga and N. Yoshida, Damage Process of Resolidified Part on CVD-W Coated Molybdenum under High Heat load, Journal of Nuclear Materials, 313-316, 2003, 250-254.

S. Nagata, B. Tsuchiya, N. Ohtsu, T. Sugawara, T. Shikama, K. Tokunaga, M. Takenaka and E. Kuramoto, Hydrogen and Deuterium Uptake in Helium Implanted Layer of Mo and W, Journal Nuclear Materials, 313-316, 2003, 279-283.

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K.. Uehara , Y. Saito and K. Hori, Paleotidal regime in the Changjiang (Yangtze) Estuary, the East China Sea and the Yellow Sea at 6 ka and 10 ka estimated from a numerical model. Marine Geology, 183, Issue 1-4, 2002, 179-192 .

A. Masuda and A. Okuno, Quasi-geostrophic turbulence in a one-layer ocean affected by horizontal divergence. In: Statistical Theories and Computational Approaches to Turbulence, Springer, Nagoya, 2001, ed. by Y. Kaneda and T. Gotoh, 2002, 327-340.

増田　章 水平発散のある f-面準地衡乱流の自己相似的発展.「乱れの発生，維持機構および統計法則の数理」、京都大学数理解析研究所考究録、 1285 号, 2002 年 178-185.

A. Masuda, Spectral evolution of quasi-geostrophic turbulence on f - and β - planes affected by horizontal divergence. In : Proc. International Symposium "Dynamics and Statistics of Coherent Structures in Turbulence, Roles of Elementary Vortices", October 21-23, Tokyo, Japan, 2002, ed. by S.Kida, 2002, 217-231.

A. Okuno and A. Masuda, Effect of horizontal divergence on the

geostrophicturbulence on a β-plane: suppression of the Rhines effect. Phys. Fluids, 15, 2002, 56-65.

G. Mizuta and A. Masuda , An application of a diffusive reduced-gravity model to deep circulation above various forms of bottom topography, J. Phys. Oceanogr., 33, 2003, 451-464.

A. Okuno and A. Masuda , Effect of horizontal divergence on the geostrophic turbulence on a β- plane : Suppression of the Rhines effect., Phys. Fluids, 15, 2003, 56-65.

野外計測
Field Observation
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T.Yanagi, T.Tokeshi and S.Kakuma, Eddy activity around the Nansei shoto (Okinawa islands) revealed by TRMM. J.Oceanogr., 58, 2002, 617-624.

T.Yanagi, Water, salt, phosphorus and nitrogen budgets of the Japan Sea. J.Oceanogr., 58, 2002, 797-804.

A.Buranapratheprat, T.Yanagi, T.Boonphakdee and P.Sawangwong, Seasonal variations in inorganic nutrinets budgets of the Bangpakong estuary, Thailand. J.Oceanogr., 58, 2002, 557-564.

S.Nardjaman and T.Yanagi, Ecosystem conditions in wet and dry seasons of Bantan Bay, Indonesai. La mer, 40, 2002, 1-10.

G.Umgiesser and T.Yanagi, Modeling of the circulation, residual currents and residence times in Hakata Bay, Japan. Reports of Research Institute for Applied Mechnics, Kyushu University, 122, 2002, 49-57.

S.Sachoemar, T.Yanagi, J.Ishizaka, H.Kawamura and K.K.Kassim, Seasonal variability of sea surface chlorophyll-a and temperature around Java, Indonesia. Reports of Research Institute for Applied Mechnics, Kyushu University, 123, 2002, 21-28.

柳　哲雄, 沿岸海域の環境容量, 海の研究, 11, 2002, 321-324.

柳　哲雄, 有明海の低次生物生産構造－ノリ不作問題に関連して－. 応用数理, 12, 2002, 49-53.

柳　哲雄, 閉鎖性海域保全の課題と展望－世界閉鎖性海域環境保全会議を踏まえて－. 資源環境対策, 38, 2002, 563-566.

柳　哲雄, 関門海峡の潮流と源平合戦. 水路新技術講演集, 15, 2002, 57-66.

柳　哲雄・藤井直紀, 沿岸海域生態系保全のための環境モニタリング総合指標の提案. 海の研究, 11, 2002, 561-567.

塚本秀史・柳　哲雄, 有明海の潮汐・潮流. 海と空, 78, 2002, 31-38.

鬼塚　剛・柳　哲雄・門谷　茂・山田真知子・上田直子・鈴木　学, ムラサキイガイ養殖による洞海湾浄化の試み. 海の研究, 11, 2002, 403-417.

林　美鶴・柳　哲雄, 周防灘と大阪湾奥部の低次生産構造の比較. 海の研究, 11, 2002, 591-611.

松村　剛・石丸　隆・柳　哲雄, 東京湾における窒素とリンの収支. 海の研究, 11、2002, 613-630.

満塩　太・柳　哲雄・橋本俊也, 広島湾のカキ養殖と海洋環境. 九州大学大学院総合理工学報告, 24, 2002, 199-206.

数値計算
Numerical Computation
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金慶烈, Kuh Kim, 姜東鎮, Y.-N. Volkov, 尹　宗煥, 竹松正樹, CREAMS で見た変化する東海／日本海, 海の研究, 11, 3, 2002, 419-429.

尹　宗煥, 温暖化後の日本海の海洋循環, 気候変動と水災害, 2002, 121-140.

S.M. Varlamov and J.-H.Yoon, Operational Simulation of Oil Spill in the Sea of Japan, Reports of Research Institute for Applied Mechanics, Kyushu University, 2002, S-1, 15-20.

T. Takikawa, J.-H.Yoon and K.-D. Cho, Tidal current in the Tsushima Straits estimated from ADCP data by Ferryboat, J. Oceanogr., 2003, 39, 37-4.

S.M. Varlamov, S. Goto, Improvement of oil spill drift modeling results by assimilation of spill detection information, Proceedings of third R&D forum on high density oil spill response, 2002, 403-409.

S.M. Varlamov, Modelling of Oil Spills in the Sea of Japan and my Activity in the Ocean Research Institute, CIC Newsletters, Center for International Cooperation, Ocean Research Institute, the University of Tokyo, 2003, 4, 4.

N.Hirose, I. Fukumori, C.-H. Kim, and J.-H. Yoon, Hindcast and forecast experiments for the Japan/East Sea circulation, Symposium 'En route to GODAE,' Biarritz, France, 2002, CDROM.

広瀬直毅, 近似スムーザーによる日本海循環再解析, 応用力学研究所所報, 124, 2003, 29-37.

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Professor Kohnosuke Sato, Hideki Zushi, Kazuaki Hanada, Associate Professor Mizuki Sakamoto, Eriko Jotaki, Hiroshi Idei

K. N. SATO, H. SAKAKITA, H. FUJITA; Interaction between Toroidal Plasma and Solid Hydrogen Pellet, Proc. of 4th Coalition Meeting on Fusion Energy, 1A043, 2002, 81.

K. N. SATO, H. SAKAKITA, H. FUJITA; Investigation on the Characteristics of Pellet Ablation in a Toroidal Plasma, 11th ICPP 2002, P182, 2002, 101.

H. Zushi, S. Itoh, K. Hanada, K. Nakamura, M. Sakamoto, E. Jotaki, M. Hasegawa, Y. D. Pan, S. V. Kulkarni, A. Iyomasa, S. Kawasaki, H. Nakashima, N. Yoshida, K. Tokunaga, T. Fujiwara, M. Miyamoto, H. Nakano, M. Yuno, A. Murakami, S. Nakamura, N. Sakamoto, K. Shinoda, S. Yamazoe, H. Akanishi, K. Kuramoto, Y. Matsuo, A. Iwamae, T. Fujimoto, A. Komori, T. Morisaki, H. Suzuki, S. Masuzaki, Overview of steady state tokamak plasma experiments on TRIAM-1M, 19th IAEA Fusion Energy Conference (Lyon, 2002) IAEA-CN-94/OV/4-6.

K. Hanada, K. Nakamura, M. Hasegawa, S. Itoh, H. Zushi, M. Sakamoto, E. Jotaki, S. V. Kulkarni, A. Iyomasa, S. Kawasaki, H. Nakashima, N. Yoshida, K. Tokunaga, T. Fujiwara, O. Mitarai, Current ramp-up experiments in full current drive plasmas on TRIAM-1M, 19th IAEA Fusion Energy Conference (Lyon, 2002) IAEA-CN-94/EX/P4-15.

M. Sakamoto and TRIAM Group, Global Particle Balance of Long Duration Discharges on TRIAM-1M, Journal of Plasma and Fusion Research SERIES, 5, 2002, 131-136.

M. Sakamoto, H. Nakashima, S. Kawasaki, A. Iyomasa, S. V. Kulkarni, M. Hasegawa, E. Jotaki, H. Zushi, K. Nakamura, K. Hanada, S. Itoh, Static and dynamic properties of wall recycling in TRIAM-1M, Journal of Nuclear Materials, 313-316, 2003, 519-523.

Y. Hirooka, M. Sakamoto, The TRIAM group, Modeling of global particle balance in steady-state magnetic fusion devices-Analysis of the recent data from the TRIAM-1M tokamak, Journal of Nuclear Materials, 313-316, 588-594.

M. Sakamoto, M. Yuno, S. Itoh, K. Hanada, K. Nakamura, H. Zushi, E. Jotaki, M. Hasegawa, S. V. Kulkarni, A. Iyomasa, S. Kawasaki, H. Nakashima, Global particle balance and wall recycling properties of long duration discharges on TRIAM-1M, 19th IAEA Fusion Energy Conference (Lyon, 2002) IAEA-CN-94/EX/P4-07.

H. Idei, T. Notake, T. Shimozuma, S. Ito, S. Kubo, M. Sato, M. Shapiro, R.J. Temkin, Evaluation of Correcting Mirrors for a Gyrotron in the Large Helical Device, Proceedings of the 26th International Conference on Infrared and Millimeter Waves, 2003, 5- 208-211.

H. Idei, T. Shimozuma, T. Notake, S. Ito, S. Kubo, M. Shapiro, J. Anderson, R.J. Temkin, K. Ohkubo, Beam Alignment of ECH Transmission Lines using Moment Method, Proceedings of 27th International Conference on Infrared and Millimeter Waves, T5.3, 2002, 151-152.

H. Idei, T. Notake, M. Shapiro, W. Kasparek, T. Shimozuma, S. Kubo, S. Ito, M. Sato, R. J. Temkin, K. Ohkubo, Development of Quasi-Optical Components for Electron Cyclotron Heating based on Phase Measurements, Proceedings of the 12th ECE and ECRH Workshop, 2002, 517-522.

H. Idei, S. Kubo, T. Shimozuma, K. Tsumori, T. Watari, T. Notake, S. Ito, S. Kobayashi, Y. Mizuno, Y. Takita, Y. Yoshimura, K. Ohkubo, S. Sakakibara, K. Narihara, I. Yamada, K. Tanaka, T. Morisaki, K.Y. Watanabe, H. Nakanishi, M. Emoto, K. Matsuoka, O. Motojima, M. Fujiwara, LHD Experimental Group, Evolution of Full Stokes Parameters in Polarized Radiative Transfer of Electron Cyclotron Waves in LHD, Proceedings of the 12th ECE and ECRH Workshop, 2002, 95-100.