

transactions of fusion technology™

CONTENTS / APRIL 1995—VOL. 27

Proceedings of the
**SIXTH INTERNATIONAL TOKI CONFERENCE ON
PLASMA PHYSICS AND CONTROLLED NUCLEAR FUSION—
RESEARCH FOR ADVANCED CONCEPTS
IN MAGNETIC FUSION**
Toki-city, Japan
November 29–December 2, 1994

- xi Comments / *George Miley*
xiii Preface / *Masami Fujiwara, Hiromu Momota*

OVERVIEW PAPERS

- 3 Issues in the Development of a Commercial Fusion Reactor / *P.-H. Rebut*
- 21 Self-Organization and Their Effects on Transport Phenomena / *Boris B. Kadomtsev*
- 28 Feasibility of Advanced Fuels / *Hiromu Momota*
- 32 A Summary on H-Mode Studies in W7-AS / *F. Wagner, J. Baldzuhn, R. Brakel, B. Branas, R. Burhenn, E. De La Luna, V. Erckmann, Y. Feng, S. Fiedler, L. Gianonne, P. Grigull, H.-J. Hartfuss, O. Heinrich, G. Herre, M. Hirsch, J. V. Hofmann, E. Holzhauser, R. Jaenicke, Ch. Konrad, G. Kocsis, W. Ohlendorf, P. Pech, F. Sardei, E. Wuerschling, S. Zoletnik*
- 40 Advances and Prospects in Reversed Field Pinch Research / *S. C. Prager*
- 45 Physics Considerations on Plasma Transport / *J. W. Connor, R. J. Hastie, H. R. Wilson*
- 52 Theory of Anomalous Transport in Toroidal Plasmas / *K. Itoh, S.-I. Itoh, A. Fukuyama, M. Yagi, H. Sanuki*
- 58 Present Status of Systems and Their Prospects / *M. Fujiwara, LHD Project Team*
- 71 Overview on Wendelstein 7-X Theory / *J. Nührenberg, W. Lotz, P. Merkel, C. Nührenberg, U. Schwenn, E. Strumberger, T. Hayashi*
- 79 Physics Studies on Heliotron/Torsatron Plasmas / *M. Okamoto, N. Nakajima, K. Ichiguchi, S. Murakami, H. Sugama, R. Kanno, T. Hayashi*

(Continued)

CONTENTS / APRIL 1995–VOL. 27

(Continued)

- 85** Recent Results of Heliotron-E Experiment / *T. Obiki, F. Sano, K. Kondo, H. Zushi, K. Hanatani, T. Mizuuchi, S. Besshou, H. Okada, K. Nagasaki, M. Wakatani, M. Nakasuga, Y. Nakamura, B. J. Peterson, C. Christou, Y. Ijiri, T. Senju, K. Yaguchi, S. Kobayashi, K. Toshi, K. Sakamoto, Y. Kurimoto, F. Funaba, A. Isayama, T. Hamada, Y. Suzuki, K. Kinoshita, H. Sugai, H. Toyota, K. Sasaki, M. Yamage, T. Saito, K. Watanabe, S. Sudo, N. Noda, K. Akaishi, M. Sato, S. Okamura, K. Ida, S. Hidekuma, M. Ima, S. Kado, K. Muraoka, K. Matsuo, H. Matsuura, T. S. Bigelow, M. Murakami, J. F. Lyon*
- 91** Reactor Prospects and Present Status of Field-Reversed Configurations / *Alan L. Hoffman*
- 97** Review of Experimental Investigations on Compact Toroids and Compact Tokamaks Using TS-3 Device / *Makoto Katsurai*
- 104** Formation and Stability of Ion Ring Configurations / *R. N. Sudan*
- 111** Present Status of Tandem Mirrors and Their Prospects / *Teruo Tamano*
- 117** Attractive Characteristics of Mirrors / *Richard F. Post, Dmitri D. Ryutov*
- 123** Long Pulse Operations Scenario of LHD / *O. Motojima, N. Ohyabu, A. Komori, N. Noda, K. Yamazaki, H. Yamada, A. Sagara, S. Yamaguchi, K. Y. Watanabe, N. Inoue, H. Suzuki, Y. Kubota, J. Yamamoto, M. Fujiwara, A. Iiyoshi*
- 131** ICRF Heating and Transport of Deuterium-Tritium Plasmas in TFTR / *M. Murakami, E. F. Jaeger, R. Majeski, C. K. Phillips, D. A. Rasmussen, J. H. Rogers, G. Schilling, J. E. Stevens, G. Taylor, C. Y. Wang, J. R. Wilson, D. B. Batchelor, M. G. Bell, R. V. Budny, C. E. Bush, N. L. Bretz, D. Darrow, A. C. England, E. Fredrickson, R. Goldfinger, G. Hammett, G. R. Hanson, J. C. Hosea, H. K. Park, S. D. Scott, E. Synakowski, R. M. Wieland, J. B. Wilgen, M. C. Zarnstorff*
- 138** Prospects and Status of Low-Aspect-Ratio Tokamaks / *Y-K. M. Peng*
- 144** Compact Steady State Tokamaks / *D. C. Robinson*
- 150** Development of a Tokamak Plasma Optimized for Stability and Confinement / *P. A. Politzer, DIII-D Team*
- 161** Study of the Ultra Low Aspect Ratio Tokamak, ULART / *M. Yamada, N. Pomphrey, A. Morita, Y. Ono, M. Katsurai*

HELICAL SYSTEMS

- 169** Recent Transport Experiments in W7-AS / *U. Stroth, J. Baldzuhn, B. Brañas, V. Erckmann, T. Estrada, L. Giannone, M. Hirsch, H.-J. Hartfuss, M. Kick, G. Kühner, H. Ringler, F. Wagner, ECRH Group, W7-AS Team*
- 178** MHD Stability of High-Beta Plasmas in CHS / *Shoichi Okamura, Noriyoshi Nakajima, Hiroshi Yamada, Keisuke Matsuoka, Kiyohiko Nishimura, Akira Ando, Akira Ejiri, Katsumi Ida, Harukazu Iguchi, Takashi Minami, Shigeru Morita, Kazumichi Narihara, Jihua Xu, Ichihiko Yamada, CHS Group, Satoru Sakakibara*

(Continued)

CONTENTS / APRIL 1995–VOL. 27

(Continued)

- 182** Nonlinear Simulations of Deformation and Destruction of Magnetic Surfaces in Helical Devices / *T. Hayashi, N. Nakajima, T. Sato*
- 186** Transport Study of Helias-Heliac Hybrid Stellarator / *Masayuki Yokoyama, Yuji Nakamura, Masahiro Wakatani*
- 190** H-Mode Study in CHS / *K. Toi, T. Morisaki, S. Sakakibara, S. Ohdachi, T. Minami, S. Morita, H. Yamada, K. Tanaka, K. Ida, S. Okamura, A. Ejiri, H. Iguchi, K. Nishimura, K. Matsuoka, A. Ando, J. Xu, I. Yamada, K. Narihara, R. Akiyama, H. Idei, S. Kubo, T. Ozaki, C. Takahashi, K. Tsumori*
- 194** Status of TJ-II Project / *C. Alejaldre, M. Blaumoser, L. Almoguera, J. Alonso, J. Botija, F. Castejón, A. García, J. Guasp, I. Labrador, F. Lapayese, M. Liniers, A. López-Fraguas, A. Martínez, M. Medrano, L. Pacios, A. Peña, J. Vega*
- 198** First Results of the TJ-I U Torsatron / *E. Ascasibar, C. Alejaldre, J. Alonso, F. De Aragón, R. Balbín, B. Brañas, E. De La Cal, F. Castejón, J. Castrejón, G. Catalán, J. R. Cepero, T. Estrada, R. Fernández, M. Francés, J. De La Gama, L. García Gonzalo, I. García Cortés, G. Gómez, J. Guasp, J. Herranz, C. Hidalgo, J. A. Jiménez Aparicio, A. Jiménez Denche, V. Krivenski, I. Labrador, F. Lapayese, M. Liniers, A. López-Fraguas, J. López Rázola, A. López Sánchez, E. De La Luna, R. Martín García, E. Martín Roquero, L. M. Martínez, F. Medina, M. Medrano, B. Ph. Van Milligen, M. A. Ochando, P. Ortiz, L. Pacios, L. Pallás, I. Pastor, M. A. Pedrosa, J. Qin, M. C. Rodríguez Fernández, L. Rodríguez Rodrigo, F. Rufino, A. Salas, L. Sánchez-Cabezudo, A. Sánchez Corpas, E. Sánchez González, J. Sánchez Sanz, C. Sierra, F. Tabarés, D. Tafalla, V. Tribaldos, A. Varias, J. Vega, B. Zurro, L. M. Kovrizhnykh, D. C. Akulina, O. F. Fedyanin, S. Grebenshchikov, N. Kharchev, L. V. Kolik, K. M. Likin, Yu. I. Netchaev, A. Ye. Petrov, K. A. Sarksyán, I. Sbitnikova, N. V. Matveev, B. M. Rassadin, Ye. M. Tai*
- 202** Magnetic and Drift Surface Measurements in Heliotron DR and Compact Auburn Torsatron / *Shigeyuki Morimoto, Tokuhiko Obiki, Hong Lin, Gregory J. Hartwell, Todd A. Schneider, Stephen F. Knowlton, Rex F. Gandy*
- 206** Observation of Heliotron-E Whisker Magnetic Field Lines Structure by the Diode Method / *F. Sano, T. Mizuuchi, M. Nakasuga, H. Matsuura, K. Kondo, H. Zushi, S. Besshou, H. Okada, K. Hanatani, K. Nagasaki, K. Tohshi, T. Hamada, B. Peterson, C. Christou, K. Yaguchi, S. Kobayashi, S. Ijiri, T. Senju, K. Sakamoto, T. Obiki*
- 210** Transport Studies of ECH/NBI Plasmas After Boronization in Heliotron E / *F. Sano, T. Obiki, K. Kondo, H. Zushi, K. Hanatani, T. Mizuuchi, S. Besshou, H. Okada, K. Nagasaki, M. Wakatani, M. Nakasuga, Y. Nakamura, B. Peterson, C. Christou, Y. Ijiri, T. Senju, K. Yaguchi, S. Kobayashi, K. Toshi, K. Sakamoto, K. Watanabe, K. Ida, S. Hidekuma, M. Iima, Y. Kurimoto, F. Funaba, A. Isayama, T. Hamada, Y. Suzuki, K. Kinoshita*
- 215** Measurement of Plasma Flows in IMS / *B. J. Peterson, J. N. Talmadge, D. T. Anderson, F. S. B. Anderson, P. G. Matthews, J. L. Shohet*
- 219** Magnetic Detection of the Free Boundary Plasma Shift in a Toroidal Helical Plasma on Heliotron-E / *S. Besshou, K. Ogata, K. Kondo, T. Mizuuchi, K. Nagasaki, H. Okada, F. Sano, H. Zushi, T. Obiki*

(Continued)

CONTENTS / APRIL 1995–VOL. 27

(Continued)

- 223 Influence of Magnetic Configuration Properties and Methods of Plasma Heating on Divertor Flow Distribution in Stellarator Type Devices / *V. S. Voitsenya, V. V. Chechkin, L. I. Grigor'eva, O. S. Pavlichenko, A. F. Shtan', A. I. Skibenko, S. I. Solodovchenko, E. D. Volkov*
- 227 Control and Effect of Long Pulse Discharge in ATF / *H. Yamada, A. Komori, S. Morimoto, O. Motojima, A. Sagara, M. Sato, M. Murakami, T. C. Jernigan, T. S. Bigelow, R. J. Colchin, A. C. England, C. C. Klepper, J. F. Lyon, J. E. Simpkins, J. B. Wilgen*
- 231 Magnetic Configuration Effect on MHD Modes in NBI Heated Plasmas in CHS / *S. Sakakibara, H. Yamada, K. Toi, A. Ejiri, K. Ida, H. Iguchi, K. Matsuoka, T. Minami, T. Morisaki, S. Morita, O. Motojima, K. Narihara, K. Nishimura, S. Okamura, K. Tanaka, J. Xu, I. Yamada, K. Watanabe, CHS Group*
- 235 Edge Density Profiles of High Beta Plasma in CHS / *Tomohiro Morisaki, Akio Komori, Shoichi Okamura, Hiroshi Yamada, Shigeru Morita, Keisuke Matsuoka, Kiyohiko Nishimura, Harukazu Iguchi, Osamu Motojima, CHS Group, Yoshinobu Kawai*
- 239 Particle Confinement of Limiter- and Divertor-Dominated NBI Plasmas in CHS / *S. Morita, H. Yamada, R. Akiyama, A. Ando, H. Arimoto, K. Ida, H. Idei, H. Iguchi, O. Kaneko, S. Kubo, R. Kumazawa, K. Matsuoka, T. Minami, T. Morisaki, S. Muto, K. Narihara, K. Nishimura, S. Okamura, T. Ozaki, S. Sakakibara, C. Takahashi, K. Tanaka, J. Xu, and I. Yamada*
- 244 Measurements of H/(H+D) Ratios in ICRF Heating Experiments of CHS / *T. Ozaki, S. Morita, R. Kumazawa, K. Nishimura, S. Masuda, A. Ejiri, T. Minami, I. Yamada, K. Narihara, S. Okamura, K. Matsuoka, A. Sagara, H. Idei, S. Kubo, K. Tanaka, C. Takahashi, CHS Group*
- 248 Estimate of the Electron Power Deposition Profile in CHS / *M. Iwase, S. Kubo, R. Kumazawa, H. Idei, K. Ohkubo, T. Mutoh, T. Watari, K. Nishimura, S. Okamura, K. Matsuoka, T. Minami, I. Yamada, K. Narihara, K. Ida, H. Iguchi, CHS Group*
- 252 Transport Analysis and Modeling for Helical System / *K. Y. Watanabe, K. Yamazaki, H. Yamada, K. Ida, O. Motojima, F. Sano, K. Kondo, H. Zushi, T. Obiki*
- 256 Finite β Effects on the ICRF and NBI Heating in the Large Helical Device / *Sadayoshi Murakami, Noriyoshi Nakajima, Masao Okamoto*
- 260 Modular Heliotron Based on LHD Physics Concept / *Kozo Yamazaki, Kiyomasa Watanabe, Osamu Motojima, Masami Fujiwara*
- 264 Particle Confinement Properties of $\ell = 3$ Reactor Scale Heliotron/Torsatron / *O. Motojima, K. Y. Watanabe, A. Sagara, K. Yamazaki, A. A. Shishkin, A. V. Zolotukhin, M. S. Smirnova, I. N. Sidorenko*
- 270 ECR Heating in L-2M Stellarator / *S. E. Grebenschikov, G. M. Batanov, O. I. Fedyanin, D. K. Akulina, E. D. Andryukhina, V. V. Abrakov, M. S. Berezhetskii, I. S. Danilkin, N. P. Donskaya, G. A. Gladkov, N. K. Kharchev, Yu. V. Kholnov, L. M. Kolik, L. M. Kovrizhnykh, N. F. Larionova, A. A. Letunov, K. M. Likin, A. I. Meshcheryakov, Yu. I. Nechaev, A. E. Petrov, K. A. Sarksyian, I. S. Sbitnikova, E. R. Sisov, A. D. Smirnova, V. N. Sukhodol'skii, G. S. Voronov*

(Continued)

CONTENTS / APRIL 1995—VOL. 27

(Continued)

- 273 The Helically Symmetric Experiment, (HSX) Goals, Design and Status / *F. Simon B. Anderson, Abdulgader F. Almagri, David T. Anderson, Peter G. Matthews, Joseph N. Talmadge, J. Leon Shohet*
- 278 Ignition Analysis on the High Field D-T Helical Reactor / *O. Mitarai, A. Sagara, S. Sudo, O. Motojima*
- 282 Experimental Results of RF Produced Plasmas in the H-1 Toriodal Heliac / *B. D. Blackwell, G. G. Borg, S. M. Hamberger, J. Howard, D. L. Rudakov, L. E. Sharp, M. G. Shats, G. B. Warr, B. C. Zhang*
- 286 Magnetic Configuration Scans in H-1 Heliac / *M. Shats, B. D. Blackwell, G. G. Borg, S. M. Hamberger, J. Howard, D. L. Rudakov, L. E. Sharp*

REVERSED FIELD PINCH STUDIES

- 293 Boundary Condition Studies in a Reversed-Field Pinch / *S. Masamune, M. Iida, D. Ishijima, N. Oda, A. Tanonaka, H. Oshiyama*
- 297 Temperature Scalings in the Repute-1 Reversed Field Pinch Plasma / *A. Ejiri, S. Ohdachi, T. Oikawa, S. Shinohara, H. Toyama, K. Yamagishi, K. Miyamoto*
- 301 Confinement Studies of Reversed Field Pinch Plasma on TPE-1RM20 / *Yasuyuki Yagi, Yoichi Hirano, Yoshiki Maejima, Toshio Shimada, Isao Hirota*
- 306 Reversed Field Pinch Experiments in the IFTES Device / *Tsutomu Shimada, Tetsuya Mori, Minoru Itagaki, Kei-ichiro Sugita, Eiki Oikawa, Teruyuki Sato*
- 310 Equilibrium of the RFP Plasma, Its Stability to the Interchange Mode, and a Scaling Law / *Katsuji Chiyoda*
- 314 Toroidal Equilibrium Analysis of Poloidal Divertor RFP / *Mitsuaki Maeyama, Eiki Hotta*
- 318 Self-Sustaining Fusion Reactor by Dynamo Action / *Kiwamu Sugisaki, Keiichi Hirano*

COMPACT TORUS (FIELD-REVERSED CONFIGURATION, SPHEROMAK) CONCEPTS

- 325 Energy Concentration in a High-Current Gas Discharge: Experiments on Plasma-Focus-Produced Dense-Plasma Spheromak / *A. B. Kukushkin, V. A. Rantsev-Kartinov, A. R. Terentiev*
- 329 Control of Spontaneous Processes in High Beta Plasma with Antiparallel Magnetic Structure / *Anatoli G. Kalygin, Andrei P. Kreshchuk, Rustam Kh. Kurtmullaev*
- 333 Low Aspect Ratio Tokamak Formation and Sustainment by Coaxial Helicity Injection Current Drive / *B. A. Nelson, T. R. Jarboe, D. J. Orvis, A. K. Martin, J. Xie, C. Zhang, L. Zhou*

(Continued)

CONTENTS / APRIL 1995—VOL. 27

(Continued)

- 337 Compact D-³He Fueled Fusion Reactor Based on an FRC / *M. V. Krivosheev, V. N. Litunovsky*
- 341 Measurement of Magnetic Field Fluctuation in a Field-Reversed-Configuration Plasma / *Shigefumi Okada, Susumu Ueki, Haruhiko Himura, Seiichi Goto*
- 345 Translation Experiments of Field-Reversed Configuration Plasma / *Haruhiko Himura, Shigefumi Okada, Seiichi Goto*
- 349 Confinement and Heating of FRC Plasma / *Shoichi Ohi*
- 353 Control of Equilibrium Separatrix Shape on Field-Reversed-Configuration Plasmas / *Tsutomu Takahashi, Kazuyuki Yamada, Yasuyuki Nogi*
- 357 Behavior of an FRC Plasma with a Multipole Field / *Yasunori Ohkuma, Kiyomitsu Suzuki, Yasuyuki Nogi*
- 361 Formation and Sustainment of a Low Aspect Ratio Tokamak by a Series of Plasma Injections / *Shin Shimamura, Makoto Taniguchi, Tsutomu Takahashi, Yasuyuki Nogi*
- 365 Feasibility Studies for Optimising Spheromak Equilibria. Part I: SPHEX / *R. Kenny, M. Nagata, T. Uyama, SPHEX Group*
- 369 Slow Formation of Field-Reversed Configuration by Use of Two Merging Spheromaks / *Yasushi Ono*
- 374 Formation of a Field-Reversed Configuration by Coalescence of Spheromaks / *Brahmananda Dasgupta, Tetsuya Sato, Takaya Hayashi, Kunihiro Watanabe, Tomohiko Watanabe*
- 378 Fundamental Experiments for FBX Burner Linear Fusion Reactor Core with FBX Plasma Flow / *Masaru Irie*
- 382 Compact TORI as Extensions of the Spherical Tokamak / *George H. Miley*
- 387 Helicity Injection in the Fact Spheromak Experiment / *M. Nagata, Y. Kinugasa, T. Uyama*
- 391 Current Sustainment of a Field-Reversed Configuration by Rotating Magnetic Field / *Masami Ohnishi, Akio Ishida, Yasushi Yamamoto, Kiyoshi Yoshikawa*

MIRROR DEVICE STUDIES

- 397 On Tandem Mirror D³He Reactors as Environmentally Safe World Power Supply / *I. N. Golovin, V. V. Arsenin, A. Yu. Kuyanov, A. L. Besbatchenko, L. V. Mikhailovskaya, G. I. Dimov*
- 402 Plasma Kinetics Analysis of a D³He Tandem Mirror Reactor with Ash Pumping / *Igor N. Golovin, Vladimir I. Khvesyuk, Dmitriy V. Semeonov*
- 406 Ash Pumping from Mirror and Toroidal Magnetic Confinement Systems / *Vladimir I. Khvesyuk, Nikita V. Shabrov, Andrei N. Lyakhov*

(Continued)

CONTENTS / APRIL 1995–VOL. 27

(Continued)

- 409 MHD Stability of a Hot-Ion-Mode Plasma in the Gamma10 Tandem Mirror / *M. Inutake, S. Furukawa, S. Tanaka, R. Katsumata, A. Ishihara, M. Ichimura, A. Kumagai, K. Hattori, H. Hojo, A. Mase, Y. Nakashima, Y. Nagayama, M. Shoji, N. Yamaguchi, I. Katanuma, D. D. Ryutov, T. Tamano*
- 413 Temporal Observation of Potential Structure by Direct Measurement of Loss-Cone Boundaries in the Tandem Mirror Gamma-10 / *Kameo Ishii, Toshiki Takahashi, Akira Abe, Isao Katanuma, Akiyosi Itakura, Makoto Ichimura, Yasuhito Kiwamoto, Kiyoshi Yatsu, Teruo Tamano*
- 417 Confinement and Heat Flux Control Experiments in the HIEI Tandem Mirror / *O. Sakai, K. Noda, Y. Ohe, Y. Yasaka*

ADVANCED TOKAMAK AND STEADY-STATE SUSTAINMENT SYSTEMS

- 423 Passive Cyclotron Current Drive for Tokamaks / *Winfried Kernbichler, Sergei Kasilov*
- 428 Status of the Tokamak Physics Experiment / *G. H. Neilson, TPX Team*
- 432 Transport Simulation of a Large-Bootstrap-Current Tokamak Plasma Driven by the Ohmic Seed Current / *Yuichi Ogawa, Jifang Wang, Takashi Yamamoto, Nobuyuki Inoue, Kunihiko Okano, Tsuneo Amano*
- 436 Development of the PF System Design and Operation Scenarios of the Large-Aspect-Ratio Midsize Diverter Tokamak KT-2 at KAERI / *S. K. Kim, B. G. Hong, K. W. Lee, S. R. In, B. H. Oh, C.-K. Hwang, Jinchoon Kim, C. S. Chang, D.-I. Choi, K. H. Chung, S. H. Hong, J. K. Lee*
- 440 Low Aspect Ratio Tokamak Experiment in University of Tokyo / *K. Hanada, T. Oikawa, K. Nozawa, H. Totsuka, K. Shinohara, E. Ishiyama, N. Shinoda, K. Yamagishi, H. Toyama*
- 444 A Mega-Ampere Spherical Tokamak Design for Beta-Limit and Confinement Studies / *S. C. McCool, A. J. Wootton, R. V. Bravenec, P. H. Edmonds, K. W. Gentle, H. Huang, J. W. Jagger, B. Richards, David W. Ross, E. R. Solano, J. Uglum, P. M. Valanju*

MAGNETOHYDRODYNAMIC EQUILIBRIUM AND STABILITY

- 451 Application of Quasi-Symmetry Concept to Conventional Stellarators / *V. D. Pustovitov*
- 455 Plasma Equilibria with Stochastic Regions and Magnetic Islands / *Sergey V. Shchepetov, Aleksandr B. Kuznetsov, Dmitrii Yu. Sychugov*
- 459 Disruption Control by the Helical Magnetic Field / *Qingquan Yu, Sizheng Zhu*
- 463 Adiabatic Evolution of the Axisymmetric Rotating Plasma / *A. Galkowski, R. Želazny*
- 467 Magnetic Field Co-Ordinate and Equilibrium Structure of Field-Reversed Configurations / *N. Shibata, A. Ishida*

(Continued)

CONTENTS / APRIL 1995–VOL. 27

(Continued)

CONFINEMENT AND TRANSPORT STUDIES

- 473 Magnetic Fluctuations in Castor Tokamak / *V. Dhyani, K. Jakubka*
- 477 Edge Ohmic Heating and Improved Confinement on HT-6M Tokamak / *Xiang Gao, HT-6M Group*
- 481 Density Fluctuations in the Advanced Toroidal Facility (ATF) Torsatron / *M. G. Shats, J. H. Harris, J. B. Wilgen, L. R. Baylor, J. D. Bell, C. H. Ma, M. Murakami, T. S. Bigelow, G. L. Bell, R. J. Colchin, R. A. Dory, J. L. Dunlap, G. R. Dyer, A. C. England, G. R. Hanson, D. P. Hutchinson, R. C. Isler, T. C. Jernigan, R. A. Langley, D. K. Lee, J. F. Lyon, A. L. Qualls, D. A. Rasmussen, R. K. Richards, M. J. Saltmarsh, J. E. Simpkins, K. L. Vander Sluis, K. M. Likin, K. A. Sarksyian, S. C. Aceto, J. J. Zielinski*
- 485 Transport Modeling of L/H Transition in Tokamaks / *Y. Fuji, K. Itoh, A. Fukuyama, S.-I. Itoh*
- 489 The Change in the H-Mode Dynamics Due to Torque Conditions / *Shinichiro Toda, Sanae-I. Itoh, Tetsuyuki Kubota, Hiroki Yamaguchi, Atsushi Fukuyama, Kimitaka Itoh*
- 493 Anomalous Plasma Transport and Induced Electric Field in a Stochastic Magnetic Field Structure / *Tetsuyuki Kubota, Sanae-I. Itoh, Shinichiro Toda, Hiroki Yamaguchi, Atsushi Fukuyama*
- 497 Transport Coefficient and Heat Pulse Propagation / *Hiroki Yamaguchi, Sanae-I. Itoh, Kazuaki Hanada, Tetsuyuki Kubota, Shinichiro Toda*
- 501 Toroidal Drift Waves in the Presence of Field-Aligned Flows / *S. Sen*
- 505 Evaluation of Stochastic Layer Near Separatrix in Toroidal Divertor / *Tomejiro Yamagishi*
- 509 Particle Simulations on Ion Loss at the Edge of a Tokamak Plasma with the Radial Electric Fields / *Suhnji Ido, Mieko Kashiwagi*

PLASMA PARTICLE AND HEAT CONTROL STUDIES

- 515 Advanced Divertor Concept—RF Divertor / *Tsuguhiro Watanabe, Tetsuo Watari, Nobuyoshi Ohyabu*
- 519 Innovations in the LHD Divertor Program / *N. Ohyabu, A. Komori, N. Noda, T. Morisaki, A. Sagara, H. Suzuki, T. Watanabe, O. Motojima, H. Takase*
- 523 Recycling Control for LHD Using Carbon Sheet Pump / *Hajime Suzuki, Akio Sagara, Nobuyoshi Ohyabu, Osamu Motojima*
- 527 Recycling Control Using Low Z Coating for LHD / *Muhamad Natsir, Kazuhiro Tsuzuki, Akio Sagara, Osamu Motojima*
- 532 Proposal of High Efficient Discharge Cleaning Using Local Island Divertor in LHD / *Akio Sagara, Nobuyoshi Ohyabu, Osamu Motojima*
- 536 Particle Simulations on Transport Control in Divertors / *Mieko Kashiwagi, Shunji Ido*
- 540 Fueling and Heating/Current-Drive by Cluster Beam Injection / *Mamoru Matsuoka*

(Continued)

CONTENTS / APRIL 1995–VOL. 27

(Continued)

NEW TRENDS AND ADVANCED CONCEPTS

- 547 Two-Component Fusion in DRACON / *V. E. Moiseenko*
- 551 Analytical Studies on a Traveling Wave Direct Energy Converter for D-³He Fusion / *L. Y. Syu, George H. Miley, Yukihiko Tomita, Hiromu Momota*
- 555 Effect of Nuclear Elastic Scattering on Fusion Reactivity of Self-Sustaining D-³He Plasmas / *Y. Nakao, K. Kai, H. Matsuura, K. Kudo*
- 559 Tail Effects on D-³He/FRC Startup Heating / *H. Matsuura, Y. Tanaka, Y. Nakao, K. Kudo, H. Momota, Y. Tomita*
- 563 Direct Energy Conversion for D-³He Reactor / *Hideaki Katayama, Kunihiro Sato, Fujio Miyawaki*
- 567 Advanced-Fuel Heat Flux, Power Density, and Direct Conversion Issues / *John F. Santarius*
- 571 An Advanced Method for Helical Coil Windings in Fusion Devices / *Tomoyuki Senba, Tsutomu Yamamoto, Kazuhiro Nakanishi, Takeshi Yamagiwa, Satarou Yamaguchi, Shinsaku Imagawa, Nagato Yanagi, Takashi Satow, Jyunya Yamamoto, Osamu Motojima*
- 575 Stability Analysis of Advanced Superconductors for Helical Devices / *Masayuki Hoshino, Takashi Satow, Osamu Motojima*

DEPARTMENT

- 581 Volume 27 Indexes