

Page **487–492** _____ Contents

Page **493–494** _____ Title, Committee, and Preface

ORIGINAL PAPERS

Edge plasma modeling

Page **495–503** _____ **INVITED PAPER**
W.M. Stacey
Recent Developments in Plasma Edge Theory

Page **504–510** _____ I. Joseph and A.M. Dimits
Connecting Collisionless Landau Fluid Closures to Collisional
Plasma Physics Models

Page **511–515** _____ Y. Kosuga, S.-I. Itoh, and K. Itoh
Turbulence Dynamics with the Coupling of Density Gradient and
Parallel Velocity Gradient in the Edge Plasmas

Page **516–521** _____ R. Tatsumi, Y. Homma, S. Yamoto, and A. Hatayama
Basic Consideration of Monte Carlo Algorithm to Solve Fluid
Equations for SOL/divertor Plasmas

Edge transport barrier and L-H transition

Page **522–527** — K. Itoh, S.-I. Itoh, T. Kobayashi, K. Kamiya, T. Ido, T. Tokuzawa, S. Inagaki, and N. Kasuya
On the Origin of Steep and Localized Radial Electric Field in the Transport Barrier at Plasma Edge

Page **528–533** — B. Chatthong and T. Onjun
Understanding of Hysteresis Behaviors at the L-H-L Transitions in Tokamak Plasma Based on Bifurcation Concept

Gyrokinetic modeling and simulation

Page **534–542** — **INVITED PAPER**
B. Scott
Gyrokinetic Theory and Dynamics of the Tokamak Edge

Page **543–548** — N. Miyato
Gyrokinetic Model beyond the Standard Ordering

Page **549–554** — T. Korpilo, T.P. Kiviniemi, S. Leerink, P. Niskala, and R. Rochford
Gyrokinetic Simulations of the Tokamak Plasma Edge in Circular Limiter Configuration

Edge plasma turbulence (transport) simulation

Page **555–562** — **INVITED PAPER**
H. Bufferand, G. Ciraolo, Ph. Ghendrih, Y. Marandet, J. Bucalossi, C. Colin, N. Fedorczak, D. Galassi, J. Gunn, R. Leybros, E. Serre, and P. Tamain
Interchange Turbulence Model for the Edge Plasma in SOLEDGE2D-EIRENE

Page **563–568** — C. Baudoin, P. Tamain, G. Ciraolo, R. Futtersack, A. Gallo, P. Ghendrih, Y. Marandet, N. Nace, and C. Norscini
On the Effect of Electron Temperature Fluctuations on Turbulent Heat Transport in the Edge Plasma of Tokamaks

Page **569–574** — P. Tamain, H. Bufferand, L. Carbajal, Y. Marandet, C. Baudoin, G. Ciraolo, C. Colin, R. Futtersack, D. Galassi, P. Ghendrih, N. Nace, F. Schwander, and E. Serre
Interplay between Plasma Turbulence and Particle Injection in 3D Global Simulations

Page **575–580** — R. Futtersack, C. Colin, P. Tamain, G. Ciraolo, Ph. Ghendrih, Y. Marandet, F. Schwander, and E. Serre
First Principle Modelling of Interplay between Langmuir Probes and Plasma Turbulence

Page **581–586** — N. Nace, M. Perin, P. Tamain, G. Ciraolo, C. Baudoin, R. Futtersack, Ph. Ghendrih, and C. Norscini
Turbulence Interaction with Driven Transport Barriers in the Scrape-Off Layer of Tokamaks

RMP and 3D effect

Page **587–591** — V. Rozhansky, E. Kaveeva, I. Veselova, S. Voskoboynikov, and D. Coster
Modeling of ITER Edge Plasma in the Presence of Resonant Magnetic Perturbations

Page **592–597** — R. Kanno, M. Nunami, S. Satake, S. Matsuoka, and H. Takamaru
Development of a Drift-Kinetic Simulation Code for Estimating Collisional Transport Affected by RMPs and Radial Electric Field

Page **598–603** — T. Kuwabara, H. Tanaka, G. Kawamura, N. Ohno, H. Nishikata, M. Kobayashi, and Y. Feng
Modeling of Linear Divertor Plasma Simulator Experiments with Three-dimensional Target Structure by Using EMC3-EIRENE Code

Neutral transport modeling

Page **604–609** — Y. Marandet, H. Bufferand, G. Ciraolo, P. Genesio, P. Meliga, J. Rosato, E. Serre, and P. Tamain
Effect of Statistical Noise on Simulation Results with a Plasma Fluid Code Coupled to a Monte Carlo Kinetic Neutral Code

Page **610–615** — N. Horsten, W. Dekeyser, G. Samaey, P. Borner, and M. Baelmans
Fluid Neutral Model for Use in Hybrid Neutral Simulations of a Detached Case

Page **616–621** — K. Ghoo, W. Dekeyser, G. Samaey, P. Börner, D. Reiter, and M. Baelmans
Accuracy and Convergence of Coupled Finite-Volume / Monte-Carlo Codes for Plasma Edge Simulations

Impurity transport modeling and simulation

Page **622–627** — A. Kirschner, D. Tskhakaya, G. Kawamura, D. Borodin, S. Brezinsek, R. Ding, Ch. Linsmeier, and J. Romazanov
Modelling of Impurity Transport and Plasma - Wall Interaction in Fusion Devices with the ERO Code: Basics of the Code and Examples of Application

Page **628–633** — S. Dai, M. Kobayashi, G. Kawamura, S. Morita, T. Oishi, H.M. Zhang, X.L. Huang, Y. Feng, D.Z. Wang, Y. Suzuki, and the LHD experiment group
EMC3-EIRENE Simulation of Impurity Transport in Comparison with EUV Emission Measurements in the Stochastic Layer of LHD: Effects of Force Balance and Transport Coefficients

- Page **634–639** — H. Inoue, Y. Homma, S. Yamoto, and A. Hatayama
Extended Numerical Modeling of Impurity Neoclassical Transport in Tokamak Edge Plasmas
- Page **640–645** — I. Borodkina, D. Borodin, A. Kirschner, I. V. Tsvetkov, V. A. Kurnaev, M. Komm, R. Dejarnac, and JET Contributors
An Analytical Expression for the Electric Field and Particle Tracing in Modelling of Be Erosion Experiments at the JET ITER-like Wall
- Page **646–650** — S. Yamoto, Y. Homma, H. Inoue, Y. Sawada, K. Hoshino, A. Hatayama, X. Bonnin, D. Coster, and R. Schneider
Effects of Classical and Neo-classical Cross-field Transport of Tungsten Impurity in Realistic Tokamak Geometry
- Page **651–656** — M. Shoji, G. Kawamura, H. Tanaka, I. Watanabe, M. Kobayashi, M. Tokitani, S. Masuzaki, and the LHD Experiment Group
Simulation Analysis of Carbon Deposition Profile in the Closed Helical Divertor Configuration in the Large Helical Device

Radiation transport

- Page **657–662** — K. Hoshino, K. Sawada, R. Idei, S. Tokunaga, N. Asakura, K. Shimizu, and N. Ohno
Photon Trapping Effects in DEMO Divertor Plasma
- Page **663–668** — J. Rosato, Y. Marandet, H. Bufferand, D. Reiter, and R. Stamm
Hybrid Formulation of Radiation Transport in Optically Thick Divertor Plasmas
- Page **669–674** — P.A. Sdvizhenskii, S.I. Krasheninnikov, and A.B. Kukushkin
A Model of Self-similar Radiative Transfer in Resonance Lines for Testing the Edge Plasma Codes

Sheath, PSI, and Dust

- Page **675–680** — A. Fukano, S. Nishioka, I. Goto, and A. Hatayama
Effects of Multi-Species Ions on Sheath and Presheath in a Magnetic Field Decreasing toward a Wall
- Page **681–686** — S. Takamura, Y. Uesugi, and T. Kuwabara
Effect of PSI on Momentum Input to Plasma-Facing Material Surfaces
- Page **687–691** — Y. Tomita, G.J. Niu, and G.N. Luo
Electrostatic Characteristic of Spherical Dust on PFM in Sheath Field

- Page **692–697** — H. Ohtani, M. Shoji, N. Ohno, Y. Suzuki, S. Ishiguro, A. Kageyama, and Y. Tamura
Visualization of Dust Particle Data with Plasma Simulation Results Using Virtual-Reality System

Kinetic modeling including atomic & molecular reactions

- Page **698–704** — D. Tskhakaya
Kinetic Modelling of the Plasma Recombination
- Page **705–710** — K. Ibano, S. Togo, T. L. Lang, Y. Ogawa, H. T. Lee, Y. Ueda, and T. Takizuka
Simulations of Tungsten Re-deposition Using a Particle-In-Cell Code with Non-uniform Super Particle Sizes

Detached-divertor modeling and simulation

- Page **711–716** — A.S. Kukushkin and H.D. Pacher
The Role of “Momentum Removal” in Divertor Detachment
- Page **717–722** — H. Nishikata, Y. Hayashi, N. Ohno, S. Kajita, and T. Kuwabara
Detailed Analysis of Plasma Resistivity in Detached Recombining Plasmas
- Page **723–728** — H. Tanaka, N. Ohno, T. Onda, K. Takeyama, S. Kajita, T. Kuwabara, and Y. Tsuji
Statistical Analysis of Particle Flux Flowing into the End-Target in between Attached and Detached States in the Linear Divertor Plasma Simulator NAGDIS-II
- Page **729–735** — S. Togo, T. Takizuka, M. Nakamura, K. Hoshino, K. Ibano, T.L. Lang, and Y. Ogawa
Simulation Study of Detached Plasmas by Using One-Dimensional SOL-Divertor Fluid Code with Virtual Divertor Model

ELM modeling and simulation

- Page **736–741** — M. Leconte, Y.M. Jeon, and G.S. Yun
Ginzburg-Landau Model in a Finite Shear-Layer and Onset of Transport Barrier Nonlinear Oscillations: A Paradigm for Type-III ELMs
- Page **742–747** — A.Yu. Pigarov, S.I. Krasheninnikov, E.M. Hollmann, and T.D. Rognlien
Modeling of Small-sized ELMs in Detached Divertor Plasmas

Core-SOL coupling simulation

- Page **748–753** — G. Telesca, I. Ivanova-Stanik, R. Zagórski, S. Brezinsek, A. Czarnicka, P. Drewelow, C. Giroud, A. Huber, S. Wiesen, and JET EFDA contributors
Core-SOL Modelling of Neon Seeded JET Discharges with the ITER-like Wall

- Page **754–759** — S. Wiesen, S. Brezinsek, D. Harting, T. Dittmar, E. de la Luna, D. Matveev, K. Schmid, and JET contributors
Effect of PFC Recycling Conditions on JET Pedestal Density
- Page **760–765** — I. Ivanova-Stanik, L. Aho-Mantila, M. Wischmeier, R. Zagórski, and JET contributors
COREDIV and SOLPS Numerical Simulations of the Nitrogen Seeded JET ILW L-mode Discharges
- Page **766–771** — R. Zagórski, W. Stępniewski, I. Ivanova-Stanik, S. Brezinsek, and JET contributors
Modelling of the JET DT Experiments in Carbon and ITER-like Wall Configurations
- Page **772–777** — K. Gałazka, I. Ivanova-Stanik, M. Bernert, A. Czarnecka, A. Kallenbach, R. Zagórski, and the ASDEX Upgrade Team
Impurity Seeding in ASDEX Upgrade Tokamak Modeled by COREDIV Code

Divertor simulation and design

- Page **778–783** — H. Kawashima, K. Shimizu, K. Hoshino, T. Nakano, and N. Asakura
Simulation of Radiative Divertor Plasmas by Ar Seeding with the Full W-Wall in JT-60SA
- Page **784–789** — H. Takeda, Y. Nakashima, A. Hatayama, M.S. Islam, K. Icimura, M.M. Islam, K. Shimizu, K. Fukui, M. Ohuchi, M. Sakamoto, and T. Imai
Numerical Simulation Study of Plasma Flow in the GAMMA10/PDX End-cell Using a Fluid Code
- Page **790–795** — D. P. Coster
Reduced Physics Models in SOLPS for Reactor Scoping Studies
- Page **796–801** — M. Blommaert, M. Baelmans, H. Heumann, Y. Marandet, H. Bufferand, N.R. Gauger, and D. Reiter
Magnetic Field Models and their Application in Optimal Magnetic Divertor Design
- Page **802–807** — G. Peřka, P. Chmielewski, R. Zagórski, V. Pericoli Ridolfini, and B. Viola
TECXY Study of a Liquid Lithium Divertor for DEMO