ITC-12/APFA'01 Program

Tuesday, December 11, 2001

09:30 ~ 09:50 **Registration** **<1st and 3rd Floor>**

09:50 ~ 10:30 Opening Ceremony **<3rd Floor>**

(Session I : Plenary & Special Talk) **<3rd Floor>**

10:30 ~ 11:15 **I-1** Review on Internal Transport Barrier Physics for Steady-State Operation of Tokamaks M. Wakatani

11:15 ~ 12:00 **I-2** Review of Burning Plasma Experiments
R. Hawryluk

12:00 ~ 12:25 **I-3** Recent Development of LHD Experiment
O. Motojima

12:25 ~ **Group Photo**

- Lunch Break -

(Session II : Extensive Fusion/Plasma Research Overview) **<3rd Floor>**

13:50 ~ 14:20 **II-1** Physics of Bursty Transport in Magnetized Plasmas
P.R. Kaw

14:20 ~ 14:45 **II-2** High Performance Operational Limits of Tokamak and Helical Systems
K. Yamazaki

14:45 ~ 15:10 **II-3** New Development on Fast ignition Research at Osaka University
K. Tanaka

15:10 ~ 15:40 **II-4** Fusion Materials R&D and Blanket Engineering in Japan
A. Kohyama

15:40 ~ 16:00 *Coffee Break* **<2nd Floor>**

(Poster session I : PI-1 ~ PI-72) **<2nd Floor>**

16:00 ~ 18:00 **Poster Presentations**

18:20 ~ 20:20 Reception for Foreign Participants <2nd Floor>

Wednesday, December 12, 2001

(Session III : MHD) **<3rd Floor>**

09:00 ~ 09:30 **III-1** Theoretical Studies on Neoclassical Tearing Modes and Their Stabilization
Q. Yu

09:30 ~ 10:00 **III-2** Resistive Wall Mode Control on the DIII-D device
M. Okabayashi

10:00 ~ 10:30 **III-3** Impact of Energetic-Ion-Driven Global Modes on Toroidal Plasma Confinement
K. Toi

10:30 ~ 10:50 *Coffee Break* **<2nd Floor>**

(Session IV : Innovative Concept I & Asian Fusion/Plasma Activity I) **<3rd Floor>**

10:50 ~ 11:15 **IV-1** MHD Stability of 3D Plasma Confinement Systems with Finite Plasma Current
W.A. Cooper

11:15 ~ 11:40 **IV-2** Magnetized Target Fusion : Prospects for low-cost fusion energy
R.E. Siemon

11:40 ~ 12:05 **IV-3** Status of KSTAR Project and Fusion Research in Korea
G.S. Lee

12:05 ~ 12:30 **IV-4** Status of SST 1 Project and Fusion Research in India
Y.C. Saxena

- Lunch Break -

(Poster session II : PII-1 ~ PII-73) **<2nd Floor>**

13:40 ~ 15:40 **Poster Presentations**

15:40 ~ 16:00 *Coffee Break* **<2nd Floor>**

(Session V : Edge Physics) **<3rd Floor>**

16:00 ~ 16:30 **V-1** Divertor Requirements for Future Tokamak Reactor
M. Sugihara

16:30 ~ 17:00 **V-2** Physics Aspects of the Dynamic Ergodic Divertor
K.H. Finken

17:00 ~ 17:30 **V-3** A review on divertor flow asymmetry in helical devices and its possible relation to particle losses V.V. Chechkin

17:30 ~ 18:00 **V-4** Progress in Numerical Modeling of SOL and Divertor Plasmas
A. Hatayama

18:20 ~ 20:30 **Banquet** **<2nd Floor>**

Thursday, December 13, 2001

(Session VI : Transport I (Theory)) **<3rd Floor>**

09:00 ~ 09:30 **VI-1** Modeling of Transport and Barrier Formation in Toroidal Plasmas
A. Fukuyama

09:30 ~ 10:00 **VI-2** Gyro-kinetic and Gyro-fluid simulations of micro-turbulence and associated flow generation Y. Kishimoto

10:00 ~ 10:30 **VI-3** ITER Confinement and Stability Modeling
A.R. Polevoi

10:30 ~ 10:50 *Coffee Break* **<2nd Floor>**

(Session VII : Transport II (Experiment)) **<3rd Floor>**

10:50 ~ 11:15 **VII-1** Heat Transport Experiments in JET : stiffness and non-locality
V.V. Parail

11:15 ~ 11:40 **VII-2** Formation and Sustainment of Tokamak equilibrium with a current hole in JT-60U T. Fujita

11:40 ~ 12:05 **VII-3** Role of radial electric field shear at the magnetic island in the transport of plasmas K. Ida

12:05 ~ 12:30 **VII-4** Plasma confinement in RF-driven tandem mirror with a strong temperature anisotropy M. Ichimura

- Lunch Break -

(Session VIII : Innovative Concept II & Asian Fusion/Plasma Activity II) **<3rd Floor>**

13:40 ~ 14:05 **VIII-1** Laboratory Study of Plasma Space/Astrophysics : Magnetic Reconnection and
Magneto-Rotational Instability H. Ji

14:05 ~ 14:30 **VIII-2** Research on high-beta plasmas based on two-fluid relaxation theory
Y. Ogawa

14:30 ~ 14:50 **VIII-3** Magnetic Confinement Fusion Research in China
Y.X. Wan

14:50 ~ 15:10 **VIII-4** Recent progress of inertial confinement fusion program in China
X.-Tu. He

15:30 ~ 18:00 **NIFS Tour**

17:30 ~ 19:30 **Lectures for citizen :** K. Nakamura, S. Nakai

Friday, December 14, 2001

(Session IX : Improved Confinement) **<3rd Floor>**

09:00 ~ 09:30 **IX-1** Internal Transport Barriers in the DIII-D Tokamak
E. Doyle

09:30 ~ 10:00 **IX-2** Mechanisms of Transport in Radiative Improved Mode
M. Tokar

10:00 ~ 10:30 **IX-3** Core and Edge Transport in NSTX Plasmas with Auxiliary Heating
R. Synakowski

10:30 ~ 10:50 *Coffee Break* **<2nd Floor>**

(Session X : Steady State and Current Drive) **<3rd Floor>**

10:50 ~ 11:15 **X-1** Current Drive Performance by Neutral Beam Injection and Electron Cyclotron Wave K. Ushigusa

11:15 ~ 11:40 **X-2** New Island Divertor on the Plasma Performance in the W7-AS Stellarator P. Grigull

11:40 ~ 12:05 **X-3** Study of Time Evolution of Toroidal current in LHD K.Y. Watanabe

12:05 ~ 12:30 **X-4** Global Particle Balance of Long Duration Discharge on TRIAM-1M M. Sakamoto

- Lunch Break -

(Session XI : Prospects to fusion reactor) **<3rd Floor>**

13:40 ~ 14:10 **XI-1** Status of the ITER Project T. Tsunematsu

14:10 ~ 14:35 **XI-2** FIRE, Exploring the Frontiers of Burning Plasma Science D. Meade

14:35 ~ 15:05 **XI-3** Stellarator Fusion Reactors – an Overview H. Wobig

15:05 ~ 15:35 **XI-4** Issues and Road Maps for Laser Fusion Reactors Y. Kozaki

15:35 ~ 16:05 **XI-5** Comparison of the Fusion with Other Prospective Energy Sources K. Okano

(Closing)

16:05 ~ 16:25 M. Fujiwara and N. Inoue

Closing

Poster Session Program

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PI-01 Passive and active corpuscular diagnostic techniques for studying LHD plasma high-energy particle physics P. Goncharov

PI-02 Spectral broadening and wavelength shift of a emission line of H-like Li ions in magnetic confined plasmas S. Zou

PI-03 Extraction characteristics of He^+ ions from a Volume Plasma Ion Source G. Q. Blantocas

PI-04 Enhancement of Effective Rate Coefficients of ions in Dense Plasma through Autoionizing States N. Yamamoto

PI-05 Observation of charge-exchange spectra on C^{6+}+H in low-energy collision T. Kobuchi

PI-06 Properties of OV spectral lines in ionizing and recombining plasmas I. Murakami
PI-07 NEUTRALIZATION LOSS OF HIGH ENERGY PROTONS IN LHD M. Sasao
PI-08 Characterization of Compact Accelerator DD Neutron Source for In-situ Calibration Experiment on Neutron Measurement at LHD Y. Shibata
PI-09
PI-10 Density Profile and Fluctuation Measurements at the Density Limit in LHD T. Tokuzawa
PI-11 Electron Temperature Measurement Using Electron Cyclotron Emission on LHD Y. Nagayama
PI-12 Study of electron Bernstein wave emission on TST-2 S. Shiraiwa
PI-13 Design of the collective Thomson scattering diagnostics for Large Helical Device using a quasi-optical frequency tunable gyrotron as a radiation source R. Pavlichenko
PI-14 Thomson Scattering Measurement in Heliotron J H. Okada
PI-15 High Energy Particle Measurements during Long Pulse Discharge in LHD T. Ozaki
PI-16 High Quality Operation of a Submillimeter Wave Gyrotron for Plasma Diagnostics Application I. Ogawa
PI-17 Computer Simulation on Electromagnetic Wave Scattering by Plasma Clouds and its Application to Plasma Diagnostics H. Hojo
PI-18 Internal magnetic probe measurement in heating experiment of FRC plasma by low-frequency magnetic pulse S. Yoshimura
PI-19 Investigation of translation process of FRC plasma using computer tomography in FIX K. Shinagawa
PI-20 Particle Energy Loss Measurement of NB injected FRC Plasma T. Asai
PI-21 Eigenmode analysis of low frequency waves in a Field-Reversed Configuration (FRC) N. Iwasawa
PI-22 New Transport Technique for FIX-FRC Plasmas M. Ohkubo
PI-23 n =1 mode global motion on field-reversed configuration plasmas K. Fujimoto
PI-24 Confinement Characteristics of Low Density FRC Plasma F. Kodera
PI-25 Intermittency Studies in Magnetically Confined Plasma Devices N. Ohno
PI-26 Fabrication of Al-Pt coating on Ni-based superalloys by sputtering-ion beam technique under Argon plasma H.P. Araghya
PI-27 Annealing behaviors of defect structures in Ni irradiated by high energy particles T. Ishizaki
PI-28 Strain Monitoring System for Cryogenic Structure of Large Helical Device A. Nishimura
PI-29 Application of low temperature plasma to modification of polypropylene A. Rashidi
PI-30 High Rate Deposition of Silicon Thin Films by a Surface-wave Excited Silane Plasma A. Ohishi
PI-31 Change of Rotating Helical Field Penetration into Tokamak Plasmas due to Local Plasma Rotation Y. Kikuchi
PI-32 Advanced Physics and Plasma Control using Segmented In-vessel Control Coils of the KSTAR Tokamak G.S. Lee
PI-33 Real-Time Plasma Current Control Experiment K. Nishimura
PI-34 Self-sustained turbulence of current-diffusive ballooning mode and drift wave instabilities M. Uchida
PI-35 Spatiotemporal Structure of Magnetic Field and Convection Vortices generated in a Rotating Spherical Shell N. Ishihara
PI-36 Modelling of Surface Wave Excitation Under a Corrugated Dielectric Plate E. Abdel-Fattah
PI-37 Anisotropy of Electron Energy Distribution Function near Walls in Non-Magnetized Discharges T. Ishijima
PI-38 Analytic Modeling of the Feedback Stabilization of Resistive Wall Modes V.D. Pustovitov
PI-39 Helical Divertor Plasma in Pellet Fueled Discharges in LHD S. Masuzaki
PI-40 Formation and Sustainment of Low Aspect Ratio Torus Plasma by ECH in the LATE Device M. Uchida
PI-41 Recent Experiments in Heliotron J T. Obiki
PI-42 Profiles of Divertor Plasma in Heliotron J W.L. Ang
PI-43 The high power ICRF Heating in LHD in the fourth campaign T. Yamamoto
PI-44 Hydrogen Plasma Production in the lower hybrid frequency range H. Kikuchi
PI-45 A Calculation of Distribution Function of ICRF Heated Plasma in LHD with Bounce-averaged Fokker-Planck Equation K. Saito
PI-46 Ion Bernstein Wave heating using Folded Waveguide antenna on LHD Y. Torii
PI-47 The Radio Frequency Characteristics of the Combline Antenna N. Takeuchi
PI-48 Numerical simulations of turbulence in RTP discharges with dominant off-axis ECH M.R. de Baar
PI-49 Effect of ECH/ECCD on Sawtooth Oscillation in NBI-heated JT-60U Plasmas A. Isayama
PI-50 Investigation of Turbulence in a High-Temperature Plasma by Microwave Scattering Techniques in Modern Stellarators N.N. Skvortsova
PI-51 70 GHz Electron Cyclotron Resonance Heating System for Heliotron J H. Shidara
PI-52 Recent progress of the high power ECRF system on JT-60U M. Seki
PI-53 Behavior of Intrinsic and Injected Impurities in Heliotron J ECH plasmas H. Kawazome

PI-54 Intermittent Ion Trajectories and Focusing in Spherical Inertial Electromagnetic Confinement V.P. Budaev
PI-55 One Possible Experiment with K^+ Ions on Large Helical Device A. Shishkin
PI-56 Compatibility of Different Elements of Confinement Characteristics in Quasi-axisymmetric Stellarators S. Okamura
PI-57 On characteristic difference in neoclassical bootstrap current between CHS heliotron/torsatron and CHS-qa quasi-axisymmetric stellarator M. Isobe
PI-58 Design of magnetic coil system for CHS-qa A. Shimizu
PI-59 Stimulated cold fusion Z. Emami
PI-60 A New Design of a tandem mirror I. Katanuma
PI-61 Driven reconnection controlled by particle dynamics in a collisionless open system R. Horiuchi
PI-62 Effects of Additional Pumping System on the Plasma Parameters in the LHD H. Suzuki
PI-63 Ion-acoustic Waves in a Dusty Plasma with Non-isothermal Electrons a Pseudopontential approach K.K. Mondal
PI-64 Stabilization of MHD Modes in the HIEI Tandem Mirror Using a Magnetic Divertor N. Takano
PI-65 Finite β Equilibria of Heliotron J Plasmas Y. Suzuki
PI-66 Ion Temperature Gradient Driven Instability, Parallel flow and Enhanced Reversed Magneic Shear Transition S. Sen
PI-67 MHD phenomena in IR-T1 Tokamak M. Ghoranneviss
PI-68 Analysis of effects of the ion polarization current on the Neoclassical Tearing Mode N. Takei
PI-69 Non-linear phenomena of energetic-ion-driven MHD instabilities in LHD S. Yamamoto
PI-70 Fast plasma density and radiation response on TESPEL ablation into LHD V.Yu Sergeev
PI-71 Transient Transport Studies for Particle and Heat Using Tracer-encapsulated Solid Pellet Injection in LHD N. Tamura

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PII-01 Fine structure of divertor flow distributions in the $l = 3$ URAGAN-3M torsatron E.D. Volkov
PII-02 Transient Response of Electron Temperature to Abrupt Plasma Edge Cooling on LHD S. Inagaki
PII-03 Nonlocal transfer of electrons in divertor and self-similarity of distribution function O.G. Bakunin
PII-04 Modification of the magnetic field structure in the vicinity of the *x-point* by the strong mirror field for a field-reversed configuration (FRC) with the thick *edge-layer* plasma Y. Suzuki
PII-05 Effect of Rotating Helical Magnetic Field on the Turbulence Fractal Structure in the Tokamak Edge Plasma V.P. Budaev
PII-06 Effects of Rotating Helical Magnetic Field on Inhomogeneities of Hydrogen Recycling H. Kojima
PII-07 Turbulent particle fluxes in edge region of CHS Heliotron/Torsatron plasmas K. Ohkuni
PII-08 Edge Thermal Instability and MARFE-like Asymmetric Radiative Collapse at the Density Limit in LHD B.J. Peterson
PII-09 Physical Properties of Collisionless Pitch Angle Scattering at X-points and those Effects on Confinement of Field-Reversed Configuration S. Jimbo
PII-10 Behavior of the Edge Plasma near the Anchor Conducting Plates and Their Effect on the Plasma Confinement in the GAMMA 10 Tandem Mirror Y. Nakashima
PII-11 Characteristic Plasma Behaviors in the Divertor Reversed Field Pinch TPE-2M Y. Sato
PII-12 Particle Confinement Improvement by Current Ramp on HL-1M L. Yan
PII-13 Role of Parallel Flow in the Improved Mode on STOR-M Tokamak S. Sen
PII-14 CCD Camera Array System for Electron Density and Temperature Measurement in the LHD Plasma Periphery M. Shoji
PII-15 Measurement of Bremsstrahlung Profile with a High-Spatial Resolution in LHD H. Nozato
PII-16 Two-stage Acceleration Experiment on a Compact Toroid Injector for the Large Helical Device J. Miyazawa
PII-17 Development of the guide tube for magnetic high field side pellet injection K. Kizu
PII-18 Construction of a Toroidal Plasma Confinement Device with a Floating Internal Coil for Studying High Beta Plasmas Y. Ogawa
PII-19 Studies on Modes in Weakly Relativistic Magnetized Plasmas H.K. Malik
PII-20 Behaviors of Unstable Low Frequency Waves by Pump hf Waves in an Inhomogeneous Plasma in the Presence of Beam Ions T. Kouketu
PII-21 Current Control System for Superconducting Coils of LHD H. Chikaraishi
PII-22 Interaction between the Helical Coil Current and the Toroidal Plasma Current in the Large Helical Device N. Yanagi
PII-23 Study of post-arc plasma behavior in an AC circuit breaker M. Borghei
PII-24 Improving Performance of Negative-ion Based Neutral Beam Injector for JT-60U T. Yamamoto
PII-25 Analysis of ICRF Heating by Three Dimensional Calculation in LHD T. Seki
PII-26 Simulation of Obliquely Incident Electromagnetic Waves in Inhomogeneous Unmagnetized Plasmas K. Nakayama
PII-27 Computer Simulation on Cross Polarization Scattering in Plasmas with Magnetic Shear G. Uruta
PII-28 Construction of Generalized Magnetic Coordinates for Helical Magnetic field M. Kurata

PII-29
PII-30 Configuration Effect on MHD Activities in Large Helical Device S. Sakakibara
PII-31 The Marginally Stable Pressure Profile and a Possibility of High beta Plasma Confinement in LHD T. Watanabe
PII-32 Tearing Mode in a Heliotron Plasma K. Ichiguchi
PII-33 Investigation of dynamics of pressure deformation in nonlinear MHD simulation of the Large Helical Device H. Miura
PII-34 Equilibrium calculation of the Heliac Plasma K. Harada
PII-35 Effect of Plasma Rotation on Nonlinear Resistive Wall Mode in Tokamaks M. Sato
PII-36 Resistive Wall Mode Studies in an RFP with External Helical Field S. Masamune
PII-37 Low-n ideal MHD analysis in limiter plasma on LHD Y. Narushima
PII-38 Stabilization of Neoclassical Tearing Mode by ECCD for JT-60 Super-Conducting Tokamak N. Hayashi
PII-39 Ideal MHD Stability Analysis for a Quasi-Axisymmetric Stellarator CHS-qa C. Suzuki
PII-40 Finite Larmor Radius Effect on Nonlinear Behavior of Collisionless MHD Modes T. Matsumoto
PII-41 Development of Laser Welding Technology for Vanadium and Its Alloys N.-Ji. Heo
PII-42 Advanced Fusion Reactor Design using Remountable HTc S.C. Magnet H. Hashizume
PII-43 Magnetic Field and Force of Helical Coils for Force Free Helical Reactor (FFHR) S. Imagawa
PII-44 HERCULES (Helical Rotating Cusp Fields Experiments) N. Nishino
PII-45 Power Balance Analysis in the ICRF Sustained LHD Type Proton-Boron Fusion Reactor Y. Matsumoto
PII-46 Attractive Prospective of IEC D-^{3}He Fusion and Physics Issues to be resolved H. Momota
PII-47 Interaction of Low Activation Vanadium Alloys with Atmospheres in Various Oxygen Partial Pressure K. Dewi
PII-48 Low activation characteristics of several heats of V-4Cr-4Ti ingot T. Nagasaka
PII-49 Development of Accelerator-Driven Fusion Neutron Generation Technology for International Fusion Materials Irradiation Facility M. Sugimoto
PII-50 Fabrication of ceramic coatings on NIFS-HEAT by plasma-assisted deposition method A. Suzuki
PII-51 Development of ITER Divertor Plate K. Sato
PII-52 MICROSTRUCTURE AND HELIUM RELEASE BEHAVIOR OF NEUTRON-IRRADIATED SiC CONTAINING B_4C Y. Pramono
PII-53 Blanket experiments using enriched Li2TiO3 / ferritic steel / beryllium assemblies and D-T fusion neutrons A. Klix
PII-54 Numerical Analysis on the Heat Transport in Channels of Superconducting Magnets Cooled by He II S. Hamaguchi
PII-55 Improvement of Mechanical Properties and Critical Current of Bi-2223 for Current lead Application Y. Hishinuma
PII-56 Remarks on Saturation of Energy Confinement in High Density Regime on H. Yamada
PII-57 Orbit of High Energy Particles in a Heliotron J plasma T. Hirose
PII-58 ECH Power Modulation Experiments in LHD S. Kubo
PII-59 RUNAWAY TRANSPORT STUDIES IN THE HL-1M TOKAMAK Y. Zheng
PII-60 One Possible Method of Mathematical Modeling of Turbulent Transport Processes in Plasma N.N. Skvortsova
PII-61 Generalized self-organization theory for open and dissipative dynamical systems with various fluctuations Y. Kondoh
PII-62 Magnetic Fluctuation and Related Particle Transport in a Field-Reversed Configuration T. Takahashi
PII-63 Particle Simulation Study on Profile Relaxation in Field-Reversed Configurations H. Ohtani
PII-64 Simulation Study of Alfvén Eigenmode Bursts and Fast Ion Loss Y. Todo
PII-65 Theory of transient transport in toroildal plasmas K. Itoh
PII-66 Transport Barrier Simulation of LHD and CHS Plasmas K. Yamazaki
PII-67 Effect of Finite Deviation of Super-Banana Orbit From Magnetic Surface On Neoclassical Transport in the Helical Torus J. Todoroki
PII-68 Study of Energetic Particle Confinements in Strongly Inward Shifted Configurations of LHD S. Murakami
PII-69 Electromagnetic ITG Modes in Helical Systems T. Kuroda
PII-70 Extraction of Charged Particles from Helical Device K. Kodera
PII-71 Neoclassical Flow and Transport of Impurities in Heliotron/Torsatron and Quasi-symmetric Configurations S. Nishimura
PII-72 Lagrangian Formulation of Neoclassical Transport Theory and its Application to the Region near the Magnetic Axis in a Tokamak S. Satake