ITC-11 Program

Tuesday, December 5, 2000

08:30 ~ 09:40 Registration <1st and 3rd Floor> 09:40 ~ 10:20 **Opening Ceremony** <3rd Floor> 10:20 ~ 10:40 *Coffee Break* <2nd Floor> (Session I; Plenary) <3rd Floor> 10:40 ~ 11:40 I-1 Some Aspects of Plasma-Potential Structure Formation and Related Plasma **Applications** N. Sato 11:40 ~ 12:40 I-2 Radial Electric Fields and Their Importance in Fusion Research R. R. Weynants 12:40 ~ **Group Photo** - Lunch Break -(Poster Session I; PI-1 ~ PI-69) <2nd Floor> 13:40 ~ 15:40 Poster Presentations 15:40 ~ 16:00 *Coffee Break* <2nd Floor> (Session II; Sheath & Nonlinear Phenomena) <3rd Floor> 16:00 ~ 16:40 II-1 Sheaths, Double Layers and Dust Levitation J. E. Allen 16:40 ~ 17:10 II-2 Electrostatic Localized Structures in Plasmas K. Saeki 17:10 ~ 17:40 II-3 Chaos Control and Taming of Turbulence by Application of External Electric **Fields** T. Klinger 17:40 ~ 18:10 II-4 Dynamics of Filamentary Structures in Magnetized Plasmas G. J. Morales 18:20 ~ 20:20 **Reception for Foreign Participants** <2nd Floor> Wednesday, December 6, 2000 <3rd Floor> (Session III; LH-Transition & E_r-Structure) 09:00 ~ 09:25 III-1 Potential Structures and Flow Measurements with Separatrix Biasing in the **CASTOR Tokamak** G. Van Oost $09:25 \sim 09:50$ III-2 Structure of Radial Electric Field and Toroidal/Poloidal Flow in High Temperature Toroidal Plasma K. Ida 09:50 ~ 10:15 III-3 Electric Field Bifurcation, Fluctuation Change and Edge Transport Barrier in the JFT-2M Tokamak Y. Miura

10:15 ~ 10:40 III-4 Internal Transport Barrier Triggered by Neoclassical Transport in W7-AS U. Stroth

10:40 ~ 11:00 Coffee Break

<2nd Floor>

(Session IV; Barrier Dynamics & Bifurcation) <3rd Floor>

11:00 ~ 11:40 **IV-1** Statistical Theory of Turbulence, Transport and Structural Bifurcation of Plasmas S. -I. Itoh

11:40 ~ 12:05 **IV-2** Doppler Reflectometry: Measuring the Propagation Velocity of Density Perturbations M. Hirsch

12:05 ~ 12:30 **IV-3** Dynamic Behavior Caused by Bifurcation Property of Radial Electric Field in a Toroidal Helical Plasma of CHS A. Fujisawa

- Lunch Break -

(Poster Session II; PII-1 ~ PII-66)

<2nd Floor>

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

15:40 ~ 16:00 *Coffee Break*

<2nd Floor>

(Session V; Field Aligned & Cross Electric Field) <3rd Floor>

16:00 ~ 16:40 V-1 Axial and Radial Potential Structure and Current Flow in GAMMA 10 T. Saito

16:40 ~ 17:10 V-2 Field-Aligned Plasma-Potential Structure Formed by Local Electron Cyclotron Resonance R. Hatakeyama

17:10 ~ 17:40 V-3 Control of Radial Electric Field and Low-Frequency Fluctuations in Open-Ended Systems M. Inutake

17:40 ~ 18:10 V-4 Origin of Broadband Wave Spectrum and Multi-Scale Coherent Structures in the Auroral Ionosphere G. Ganguli

18:30 ~ 20:30 **Banquet**

<2nd Floor>

Thursday, December 7, 2000

(Session VI; Dusty & Non-Ideal Plasmas)

<3rd Floor>

09:00 ~ 09:40 VI-1 Physical Processes in Complex Plasmas G. Morfill

09:40 ~ 10:10 VI-2 Liquid- and Crystallike Structures in Dusty Plasmas V. E. Fortov

10:10 ~ 10:40 VI-3 Coulomb Explosion of Molecule and Cluster Driven by Ultra Intense Laser Pulse K. Nishihara

10:40 ~ 11:00 Coffee Break

<2nd Floor>

(Session VII; Fine Plasma Structure) <3rd Floor> 11:00 ~ 11:25 VII-1 Heavy Ion Beam Probe Diagnostic of Static and Dynamic Potential Structure H. Iguchi 11:25 ~ 11:50 VII-2 Fine Scale Structures in the RTP Tokamak Plasma, Measured with High **Resolution Thomson Scattering** N. Lopes Cardozo 11:50 ~ 12:15 VII-3 Energetic Ion Transport and Phase Space Structure in the Large Helical Device S. Murakami 12:15 ~ 12:40 VII-4 Physics of the Internal and External Transport Barriers M. Tendler - Lunch Break -(Session VIII; Fusion Frontier in Japan) <3rd Floor> 13:40 ~ 14:10 VIII-1 Formation of Internal Transport Barriers and Its Impact on the JT-60U Plasmas S. Ide 14:10 ~ 14:40 VIII-2 Potential Measurement and Limiter Experiment on LHD K. Nishimura 14:40 ~ 15:10 VIII-3 Quasi-Axisymmetric Stellarator CHS-ga K. Matsuoka 15:30 ~ 18:00 NIFS Tour $17:20 \sim 19:00$ Lectures for citizen: N. Sato, S. Akasofu Friday, December 8, 2000 (Session IX; Non-Neutral Plasmas & Vortices) <3rd Floor> 09:00 ~ 09:40 IX-1 Experiments and Theory on 2D Electron Vortex Dynamics in Sheared Flows A. A. Kabantsev 09:40 ~ 10:10 IX-2 Controlled Experiment of Two-dimensional Vortex Dynamics in Electron Plasma Y. Kiwamoto 10:10 ~ 10:40 **IX-3** Spiral Structure Formation in a Rotating Unstable Plasma M. Y. Tanaka 10:40 ~ 11:00 *Coffee Break* <2nd Floor> (Session X; Divertor) <3rd Floor> 11:00 ~ 11:40 X-1 Static and Dynamic Behaviors of Detached Plasma in Divertor Simulator **NAGDIS-II** S. Takamura 11:40 ~ 12:10 **X-2** Electric Potential Cells at the Diverted Tokamak Separatrix M. J. Schaffer

J. Winter

12:10 ~ 12:40 **X-3** Dust - A New Challenge for Fusion Research?

(Session XI; Flow & Fluctuation)

<3rd Floor>

- 13:40 ~ 14:20 **XI-1** Self-Organization of Zonal Flow Structure: The Physics Behind the Color Viewgraphs P. H. Diamond
- 14:20 ~ 14:45 **XI-2** On the Link between ExB Sheared Flows and Rational Surfaces in Stellarator and Tokamak Plasmas C. Hidalgo
- 14:45 ~ 15:10 XI-3 Effects of Zonal Flow on Turbulent Transport Scalings T. S. Hahm
- 15:10 ~ 15:35 XI-4 On Viscous Damping and Rotation in Low-Shear Stellarators H. Wobig
- 15:35 ~ 16:05 **Prospects:** K. Itoh

Closing

Poster Session Program

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- PI- 1 A New Closed Form of the Green Function of Axisymmetric Plasma Equilibrium R. Amrollahi et al.
- PI- 2 MHD Activity and Disruption in Low-q(a) in Iran Tokamak 1 (IR-T1) M. Ghoranneviss et al. (M. Masnavi)
- PI- 3 The Structure of Electrical Potentials in the Near-Wall Plasma and Bohm's Criterion A. F. Nastoyashchii and I. N. Morozov
- PI- 4 Increase of Hot Initial Plasma Energy Content in the End System of Ambal-M During Hydrogen Puffing T. D. Akhmetov et al.
- PI- 5 Plasma Flow Structure in the Helical Divertor of an 1=3 Torsatron and Its Relation to Particle Losses V. V. Chechkin et al.
- PI- 6 Radial Distributions of RF Discharge Plasma Parameters and Radial Electric Field in the Uragan-3M Torsatron E. D. Volkov et al.
- PI- 7 Recent Results of the Electric Field Investigations on T-10, Tuman 3M and TJ-II Plasma Confinement Devises by HIBP Diagnostics L. I. Krupnik et al.
- PI- 8 Plasma Electric Potential Sensitivity to the Formation of Internal and External Transport Barriers A. V. Melnikov et al.
- PI- 9 Limiter Bias Experiment on SINP Tokamak Plasma S. Raychaudhuri
- PI-10 Edge Plasma Radial Transport and Confinement Property on the HL-1M Tokamak W. Y. Hong et al.
- PI-11 Electrostatic Behavior and MHD Activity During Limiter Biasing on the CT-6B Tokamak P. Khorshid et al. (D. Dorranian)
- PI-12 Measurement of Potential in the Core Region of the Madison Symmetric Torus Reversed Field Pinch K. A. Connor et al.
- PI-13 Radial Force Balance and Radial Current Generation in the H-1 Heliac M. G. Shats
- PI-14 Plasma Current Profile Effect on the Radial Electric Field Perturbation and Confinement Bifurcation in TUMAN-3M Tokamak L. G. Askinazi et al.
- PI-15 Formation of Transport Barriers in Lower Hybrid Experiment at FT-2 S. I. Lashkul et al.
- PI-16 Studies of ETB Evolution and Stability on COMPASS-D Tokamak A. R. Field et al.
- PI-17 Pedestal Structure and Thermal Energy Confinement of ELMy H-mode in JT-60U H. Urano et al.
- PI-18 H-mode Edge Structure in JT-60U High Density Improved Confinement Plasmas T. Fukuda et al.
- PI-19 Active Control of Internal Transport Barrier and Confinement Database in JT-60 Reversed Shear Plasma Y. Sakamoto et al.
- PI-20 Fast Plasma Shutdown in JT-60U Tokamak with Increased Critical Electric Field below Which Runaway Electrons Are Avoided M. Bakhtiari et al.

- PI-21 The Role of Neutrals in ELMy H-mode Plasmas: 2D Transport Simulation with COCONUT S. Miyamoto et al.
- PI-22 On Possible Role of Parallel Flow Profile in the Transition of Enhanced Reverse Shear Modes D. Sarmah et al. (S. Sen)
- PI-23 Qualitative Difference of Equilibrium Current between W7-AS and W7-X Configurations M. Yokoyama
- PI-24 A Walk in the Parameter Space of L-H Transitions without Stepping on or through the Cracks R. Ball and R. L. Dewar
- PI-25 An Approach on Transport-Barrier Formation in Tokamaks with Reversed Magnetic Shear X. M. Qiu and X. D. Peng
- PI-26 Nonlinear Destabilization of Double Tearing Modes in Reverced Magnetic Shear Plasmas Y. Ishii et al.
- PI-27 Radial Dependence of Collisionless Trapped Ion Mode on Pressure and q Profiles J. Li et al.
- PI-28 Effects of Kinetic and Pair Collision Processes on Structural Changes in Predisruption Phase E. Farshi and S. Goudarzi
- PI-29 Intensive Nonlinear Plasma Acceleration by Viscosity: A Possible Root of the Energetic Solar Wind K. Hirano
- PI-30 Anomalous Radial Transport of Electrons Driven by the Electron-Ion Hybrid Instability Due to the Rotational Flow Shear of Electrons in a Magnetized Filamentary Plasma A. Matsubara et al.
- PI-31 Effects of Pressure Anisotropy on Plasma Current Transport S. Oikawa et al.
- PI-32 Potential Structure and Radial Profile of Neutron Production Rate in Spherical Inertial Electrostatic Confinement Plasmas H. Matsuura et al.
- PI-33 A Theoretical Calculation of Transition Power from Capacitive Mode to Helicon Mode in Helicon Wave Discharge B. H. Park et al. (D. Choi)
- PI-34 Plasma Potential Structure in Various Inductively Coupled Plasma Sources M. Nasser and H. Fujita
- PI-35 Radial and Axial Profiles in a Diffused Ar/SF₆ Electronegative-Plasma with bi-Maxwellian Electrons E. Stamate and K. Ohe
- PI-36 Evaluation of the Sheath Factor in Electronegative Gas Plasmas M. Shindo et al.
- PI-37 On the Cathode Sheath in Microhollow Cathode Discharges L. Biborosch et al. (G. Popa)
- PI-38 Electron Acceleration in a Microwave Discharge at Half-Gyrofrequency A. V. Vodopyanov et al. (M. Bacal)
- PI-39 The Structure of Electromagnetic Fields in Planar Surface Wave Plasmas H. Hazama et al.
- PI-40 Effect of Magnetic-Mirror Confinement on Electron Temperature Control in ECR Plasma N. Itagaki et al.
- PI-41 Velocity Distribution of Ca Ions Confined in RF Ring Trap M. Aramaki et al.
- PI-42 Charge Inversion Phenomenon of Strongly Coupled Macroions M. Tanaka and A. Y. Grosberg
- PI-43 Microscopic Motions and Defect Behaviors of 2D Strongly Coupled Coulomb Clusters Y. J. Lai and Lin. I
- PI-44 Suspension of Submicron Dust Particles in a Diffused Plasma N. Hayashi
- PI-45 Structures and Dynamics Confined Yukawa System: Effects of Gravity and Temperature C. Totsuji et al.
- PI-46 Parallel Molecular Dynamics Simulations of Large Coulomb Clusters: Structural Crossover to Infinite System T. Kishimoto et al.
- PI-47 Ordered Structures of Dust Particles in Nuclear Induced Plasma and Plasma under Microgravity
 A. P. Nefedov
- PI-48 Excitations, Evolutions, Roles and Properties of Wave Structures in Nonequilibrium Plasmas V. I. Maslov et al.
- PI-49 Effects of Ion-Beam Injection on Plasma Potential T. Honzawa
- PI-50 On the Stimulation Mechanism of Low-Frequency Instabilities in Magnetized Plasma M. Sanduloviciu et al.
- PI-51 Electron Heating by Nonlinear Landau Damping of Electrostatic Waves in an Electron Beam-Plasma System T. Maehara et al.
- PI-52 Nonlinear Evolution of Current-Driven Instabilities and Energy Transport to Heavy Ions M. Toida et al.
- PI-53 On the Origin of Flicker Noise in Various Plasmas E. Lozneanu et al. (S. Popescu)
- PI-54 Scaling Invariance of the Distribution Function in a Marginally-Stable State A. V. Ivanov
- PI-55 Two Dimensional Self-Focusing of a Laser Beam in an Inhomogeneous Laser Produced Plasma T. G. Singh et al.
- PI-56 Laserspectroscopic Measurement of Electric Fields by Means of Optical Impedance S. Solyman et al.
- PI-57 Ion Acceleration in Laser Wakefield H. Ito et al.
- PI-58 Analyses of Macroscopic Structures of Laser Produced Plasma Expanding Into Magnetic Field T. Muranaka and H. Nakashima
- PI-59 Experimental Observation of Radiation from Cerenkov Wakes in a Magnetized Plasma N. Yugami et al.
- PI-60 Self-Consistent Sheaths in RF Dusty Plasmas Y. I. Chutov and W. J. Goedheer

- PI-61 Particle Simulation of Potential Formation Due to Local ECR along Diverging Magnetic-Field Lines
 T. Ishimori et al.
- PI-62 Potential Distribution in Longitudinally Inhomogeneous dc Current Driven Weakly-Ionized Plasma L. Sirghi et al.
- PI-63 Revisit to the Helicity and the Generalized Self-Organization Theory Y. Kondoh et al.
- PI-64 Soliton Formation in Spiral Galaxies M. Savkovic et al.
- PI-65 Observation of Plasma Hole in a Rotating Plasma K. Nagaoka et al.
- PI-66 Multipole Vortices in an ECR Plasma A. Okamoto et al.
- PI-67 Steady State Formation of an Electron Plasma in a Toroidal Geometry C. Nakashima et al.
- PI-68 Spectroscopic Studies of a High Mach-Number Rotating Plasma Flow A. Ando et al.
- PI-69 Shear Flow Stabilization of Drift-Wave Fluctuations in an ECR-Produced Linear Plasma M. Yoshinuma et al.

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- PII- 1 Observations of MHD Instabilities on the IR-T1 (Iran-Tokamak 1)
 - M. Ghoranneviss and M. Masnavi (M. Masnavi)
- PII- 2 Dynamics of Plasma Impurity Movement in a Scrape-off Layer A. F. Nastoyashchii
- PII- 3 On the Ion Distribution Function around the Plug in a Tandem Mirror I. Katanuma et al.
- PII- 4 Role of the Radial Potential Profile Control of the Core Plasma in the Tandem Mirror K. Ishii et al.
- PII- 5 Potential Study of GAMMA 10 End Region under Variation of End Plate Resistance Y. Tatematsu et al.
- PII- 6 Radial Electric Field Control with a Biased Electrode in the Tohoku University Heliac S. Kitajima et al.
- PII- 7 Properties of the Inward Shift Configuration of LHD for the Control of Electric Field in Plasma with the Electron Injection A. Shishkin et al.
- PII- 8 Analytical Study of Ambipolar Radial Electric Field in LHD M. Yokoyama et al.
- PII- 9 Effects of Radial Electric Field on Neoclassical Transport in Helical Torus H. Sanuki et al.
- PII-10 Monte Carlo Simulation Study of Neoclassical Transport in Inward Shifted LHD Configurations A. Wakasa et al.
- PII-11 Radial Electric Field Effects on Experimental and Theoretical Transport Analysis in LHD K. Yamazaki et al.
- PII-12 MHD Stability Analysis on Helical System with Bootstrap Current Including Electric Field Effects W. A. Cooper et al.
- PII-13 LHD Type Proton-Boron Reactor and the Control of Its Peripheral Potential Structure Y. Matsumoto et al.
- PII-14 Behavior of Pedestal on the Electron Temperature Profiles in LHD K. Narihara et al.
- PII-15 Particle Confinement Study from the Temporal Evolution of the Electron Density Profiles on LHD K. Tanaka et al.
- PII-16 The Spatial / Energy Distribution of High Energy Neutral Particle in Large Helical Device T. Ozaki et al.
- PII-17 Observation of Highly Asymmetric Radiative Collapse of NBI Heated Plasma in LHD B. J. Peterson et al.
- PII-18 Measurement of 2-Dimensional Plasma Radiation Structure by Infrared Imaging Bolometory Systems on LHD N. Ashikawa et al.
- PII-19 Local Particle Transport Diagnostics in Plasma Edge Using Tracer-Encapsulated Solid Pellet Injection N. Tamura et al.
- PII-20 Electric Domain Interface in Helical Systems K. Itoh et al.
- PII-21 Internal Transport Barrier of ECH Heated NBI Plasma on CHS T. Minami et al.
- PII-22 Reduction of Parallel Viscosity in CHS-qa Configuration C. Suzuki et al.
- PII-23 The Control of the Magnetic Ripple Component Structure in CHS-qa A. Shimizu et al.
- PII-24 Generation Mechanism and Control Methods of the Radial Electric Field in the Quasi-Axisymmetric Helical Configuration S. Nishimura et al.
- PII-25 Theoretical Analysis about Radial Electric Field in Toroidal Helical Systems S. Toda and K. Itoh
- PII-26 Determination of the Radial Scale Length of the Electric Field from an Homogeneous Transition Model
 D. del Castillo-Negrete and B. A. Carreras (B. A. Carreras)
- PII-27 A Mechanism Producing Radial Electric Field E. Farshi
- PII-28 Resistive Ballooning Modes Observed in Helical MHD Simulations H. Miura et al.
- PII-29 Measurements of Potential Profile and Emission Properties in Spherically Convergent Beam Fusion

 Device K. Yamauchi et al.
- PII-30 Computer Simulation on Fine Particle Behaviors in Plasmas K. Hirose et al.
- PII-31 Enhanced Raman Scattering of a Rippled Laser Beam in Laser Plasma Interaction N. S. Singh and T. G. Singh

- PII-32 Phenomenon of Self-Focusing and Self-Phase Modulation of an Elliptic Gaussian Laser Beam in Laser Beam Interaction T. G. Singh and N. S. Singh
- PII-33 Control of Rotational Motions of Fine Particle Clouds Confined in a Weakly-Magnetized DC Discharge Plasma G. Uchida et al.
- PII-34 Void Levitation of Dust Particles and Potential Structure near a RF Powered Electrode in a Capacitively Coupled RF Plasma Y. Ohtsu et al.
- PII-35 Stability and Radial Structure of Drift Waves in the Presence of Dust S. Sen and A. Fukuyama
- PII-36 A Relation Between Current-Driven Ion Acoustic Instability and Potential Relaxation Instability Excited by a Positively Biased Electrode in a Plasma S. Iizuka et al.
- PII-37 Simulation Studies of Buneman Instabilities in a Multi-Ion-Species Plasma A. Sugishima et al.
- PII-38 Nonlinear Waves along the Magnetic Field in a Multi-Ion-Species Plasma S. Irie and Y. Ohsawa
- PII-39 The Effect of the Boundary Condition on the Chaos Excitation M. Matsukuma and Y. Kawai
- PII-40 Theoretical Estimate of Electron Energies Accelerated in an Oblique Shock Wave N. Bessho and Y. Ohsawa
- PII-41 Simultaneous Observation of Superthermal Electron Beam and Cavitons in Broad Resonance Region Due to High Power Microwave Plasma Interaction C. Rajyaguru et al.
- PII-42 Effect of Magnetic Field and Plasma Density on Nonlinear Solitary Waves in a Relativistic Plasma H. K. Malik and Y. Nishida
- PII-43 Intermittency, Chaos and Zonal Flow Generation by Drift Waves D. Jovanović and P. K. Shukla
- PII-44 Nonlinear Stationary Structures in a Drift Wave Turbulence Modulated by Zonal Flows R. Singh and P. Kaw
- PII-45 Low-Frequency Instabilities Arising from Radial-Profile Jump of Field-Aligned Plasma Flow Velocity E. Tada et al. (T. Kaneko)
- PII-46 High Plasma Rotation Velocity with Density Profile Modification by Biased Electrodes in RF Produced, Magnetized Plasma S. Matsuyama et al.
- PII-47 A New Insight into the Self-Assemblage Mechanism of Complex Space Charge Structures Formed in Plasma E. Lozneanu and M. Sanduloviciu
- PII-48 Spontaneous Variation in a Rotating Magnetosphere T. Miyoshi and K. Kusano
- PII-49 Structure Formation Due to Field Aligned Electron Stream in Magnetized Plasmas S. Ishiguro and T. Sato
- PII-50 Potential Coherent Structures in Streaming Dusty Magnetoplasma J. Vranješ et al.
- PII-51 Vorticity Hole Surrounding a Point Vortex A. Sanpei et al.
- PII-52 Determination of Stream Function of 2D Vortex in Nonneutral Plasma and Testing Sector Probe Signals K. Ito et al.
- PII-53 Ion Space Charge Structures: Formation and Properties, Experiment and Simulation C. Agheorghiesei et al. (G. Popa)
- PII-54 Surface Tension in Plasmas Related to Double Layer Formation S. Popescu and E. Lozneanu
- PII-55 Formation of Ion-Acoustic Double Layer in Two-Dimensional Open System H. Takamaru et al.
- PII-56 Analytical Description of T. Sato's Mechanism of Transformation of Ion-Acoustic Double Layer into Strong Buneman's One in Cosmic and Laboratory Nonequilibrium Plasmas V.I. Lapshin et al.
- PII-57 Shock Formation by a Velocity-Modulated Ion-Beam Injection in a Magnetized Plasma with Negative Ions T. Gohda et al.
- PII-58 Effects of Atomic Processes on Sheath Formation N. Nishino
- PII-59 Stable Sheath Formation in Magnetized Plasma Y. Tomita et al.
- PII-60 Self-Consistent Sheaths with Dust Particles in Magnetic Fields Y. I. Chutov
- PII-61 Boundary Condition May Change Chaos S. -I. Itoh et al.
- PII-62 Transitions of Macroscopic Structures and Self-Induced Chaos Observed in Plasmas by a DC Hollow Cathode Discharge Y. Kondoh et al.
- PII-63 Control of Intermittent Chaos Caused by Ion Acoustic Instability T. Fukuyama et al.
- PII-64 Interaction of Electrons with an Oscillating Potential H. Takahashi et al.
- PII-65 Measurement of Anomalous Resistance Induced by Chaotic Motion of Electrons in a Magnetic Null Point K. Yagi et al.
- PII-66 Complex Behavior in the Asymmetric Plasma Divided by the Magnetic Filter K. Ohi et al.