

1995 INTERNATIONAL SHERWOOD FUSION THEORY CONFERENCE

HYATT REGENCY LAKE TAHOE  
INCLINE VILLAGE, NEVADA  
APRIL 3-5, 1995

REGISTRATION

Upper Lobby

Sunday,	April 2	4:00 p.m. - 7:00 p.m.
Monday,	April 3	7:30 a.m. - 5:00 p.m.
Tuesday,	April 4	8:00 a.m. - 12 noon
		6:00 p.m. - 7:00 p.m.
Wednesday,	April 5	8:00 a.m. - 12 noon

RECEPTION

Lakeside B-C                      7:00 p.m. - 9:00 p.m.

M O N D A Y   M O R N I N G

WELCOME

8:20 a.m. - T. B. Kaiser, Local Chairman

1A REVIEW TALK

Regency Ballroom

8:30 a.m. - 9:20 a.m.

Presiding: R. Waltz

1A1. To Abate or Not To Abate?--That is the Greenhouse Question. M.E. Schlesinger.

1B ORAL SESSION

Regency Ballroom

9:30 a.m. - 12 noon

Presiding: R.G. Kleva

- 1B1. Bounce-Averaged Electron Fluid Equations: ITG and TEM Driven Transport. M.A. Beer.
- 1B2. Turbulence and Transport Simulations. W. Dorland, M. Kotschenreuther, M.A. Beer, G.W. Hammett, and R.E. Waltz.
- 1B3. Implications of Gyrokinetic Simulations on the Role of ITG Turbulence in Tokamak Transport. A.M. Dimits, T.J. Williams, J.A. Byers, and B.I. Cohen.
- 1B4. Structure of Short-Wavelength Modes in a Toroidal Plasma. J.B. Taylor and H.R. Wilson.
- 1B5. 3-D Tokamak Edge Turbulence. A. Zeiler, J.F. Drake, and D. Biskamp.

M O N D A Y   A F T E R N O O N

1C POSTER SESSION

Regency Ballroom

2:00 - 4:00 p.m.

- 1C1. Control of Shear Flow Profiles Via External Velocity Perturbations. R. Fitzpatrick.
- 1C2. MHD-Vlasov Simulation of the Toroidal Alfvén Eigenmode. Y. Todo, T. Sato, K. Watanabe, T.H. Watanabe, and R. Horiuchi.
- 1C3. Eliminating Locked Mode Instabilities in Tokamaks. J.D. Hanson.
- 1C4. Application of Hyperviscosity to the Study of Long Wavelength Modes in 3D Gyrofluid Tokamak Turbulence. S.A. Smith and G.W. Hammett.
- 1C5. Non Perturbative Kinetic Effects on Alfvén Eigenmodes in Tokamak Plasmas. A. Jaun, K. Appert, J. Vaclavik, and L. Villard.
- 1C6. The Neoclassical Method for Calculating Fluctuation Driven Shear Flows in Tokamaks. W. Horton and H. Sugama.

- 1C7. Transport Fluxes in H-Mode Bifurcated Layer. K.C. Shaing.
- 1C8. Influence of Momentum Conservation on the Ambipolar Electric Field and the Heat Flux in 2D Fokker-Planck Edge Modeling. N.A. Kuzmichova, A.P. Smirnov, R.W. Harvey, and K. Kupfer.
- 1C9. An Alternate Nonperturbative Method of Treating Alpha-Alfvén Waves for Examining Sensitivities to the Alpha Distribution Function. C.L. Hedrick, J.-N. Leboeuf, M.D. Prochaska, D.A. Spong, and B.A. Carreras.
- 1C10. Fast Wave Driven Alpha Current and Its Implication to Current Profile Control by FWCD in a Tokamak Reactor. C.S. Chang and D. Van Eester.
- 1C11. Ideal MHD Analysis of TFTR Discharges. S. Migliuolo, J.P. Freidberg, J. Kesner, and J.J. Ramos.
- 1C12. Fokker-Planck Simulation of Electron Transport in Scrape-off Layer. A.A. Batishcheva, M.M. Shoucri, O.V. Batishchev, S.I. Krasheninnikov, D.J. Sigmar, and I.P. Shkarofsky.
- 1C13. The Two Fluid Model and Stabilization of the  $m=1$ ,  $n=1$  Mode in a Tokamak. L.E. Sugiyama and W. Park.
- 1C14. Self-Organized Criticality as a Paradigm for Turbulent Transport. D.E. Newman, B.A. Carreras, and P.H. Diamond.
- 1C15. Investigation of Neoclassical Tearing Instability in TFTR. Z. Chang, E.D. Fredrickson, R.V. Budny, A. Janos, K.M. McGuire, M.C. Zarnstorff, TFTR. Team, J.D. Callen, C.C. Hegna, and M. Zabiego.
- 1C16. 3D Nonlinear Simulations of Drift-Resistive-Ballooning Modes in the Scrape-Off-Layer in Tokamak Plasmas. P.N. Guzdar and S.V. Novakovski.
- 1C17. Coupling of Slow Lower Hybrid Waves at the Plasma Edge: pondermotive effects, density cavitons and mode conversion. J. Preinhaelter, L. Vahala, and G. Vahala.
- 1C18. Electron Acceleration by Super Ion-Acoustic Double Layer. H. Takamaru, T. Sato, R. Horiuchi, K. Watanabe, T. Hayashi, Y. Todo, T.H. Watanabe, and A. Kageyama.
- 1C19. Slow Linear and Nonlinear Thermal Wave Propagation in Radiative Plasmas. D.Kh. Morozov and J.J.E. Herrera.
- 1C20. Singular Eigenfunctions for Shear Flow. N.J. Balmforth and P.J. Morrison.
- 1C21. Stellerator Properties of Tokamaks With Inclined Toroidal Field Coils. P. Moroz.
- 1C22. A Cure for Locked MHD Modes and Their Feedback Control. A.K. Sen.
- 1C23. Nonlinear Radiative Condensation in a Divertor Plasma During ELM Activity. P. Helander and S.I. Krasheninnikov.
- 1C24. Global Gyrokinetic Particle Simulation Studies on Isotope Effects. W.W. Lee, R.A. Santoro, S.E. Parker, and H.P. Furth.
- 1C25. Stability of the  $m=1$  Top. F.L. Waelbroeck, A.Y. Aydemir, and R.L. Miller.
- 1C26. Simulation of Divertor Plasmas With a Combined Edge Plasma/Navier-Stokes Neutral Transport Model. D.A. Knoll, P.R. McHugh, S.I. Krasheninnikov, and D.J. Sigmar.
- 1C27. Resistive Wall Mode Analysis for PBX-M Using the Nova-W Code. N. Pomphrey, D. Ward, J. Manickam, and M. Okabayashi.
- 1C28. Two-Dimensional Radial Structures of Alfvén Modes Excited by Energetic Particles in Tokamaks. F. Zonca and L. Chen.
- 1C29. MHD Stability of Simulated ITER Discharges in DIII-D. A.D. Turnbull, L.D. Pearlstein, D. Bulmer, L.L. Lao, S.J. Thompson, T.C. Luce, C.M. Greenfield, and M.N. Rosenbluth.
- 1C30. 2-D WKB-Ballooning Approach to High- $n$  TAE Modes. C.T. Hsu, C.Z. Cheng, L. Chen, G.Y. Fu, G. Rewoldt, and W.M. Tang.
- 1C31. Current Diffusion and Loop Voltage Response to a Noninductive Current Drive in a Tokamak. C. Litwin, N. Hershkowitz, and S. Wukitch.
- 1C32. Rapid Guiding Center Calculations. R.B. White and A.H. Boozer.
- 1C33. Divertor Modelling for Reactor. B.J. Lee, B. Merriman, L. Schmitz, and F. Najmabadi.
- 1C34. 3D Fluid Simulations of Turbulences in Detached SOL Plasmas. X.Q. Xu and R.H. Cohen.
- 1C35. Ballooning Stability of Supersonic Flows. R. Young and E. Hameiri.

- 1C36. 1D Model of the Transport of the Plasma and Neutrals in the Divertor Layer. A.S. Kukushkin and S.I. Krasheninnikov.
- 1C37. Symbolic Analysis of Turbulent Fluctuations. A.B. Rechester and R.B. White.
- 1C38. Modelling of Neon Puffing and Pumping in ITER Divertor. S. Ohtsu and B.J. Braams.
- 1C39. Analytical Estimation of NBI Heating Efficiency and Plasma Beta in Heliotron/Torsatrons. S. Murakami, N. Nakajima, S. Okamura, and M. Okamoto.
- 1C40. Study of a Divertor Plasma in  $E \times B$  Flow. G. Manfredi, M. Shoucri, I. Shkarofsky, P. Bertrand, A. Ghizzo, S. Krasheninnikov, D. Sigmar, O.V. Batishchev, and A.A. Batishcheva.
- 1C41. Extensions of the TAE/FL Toroidal Alfvén Time Evolution Model to Include Kinetic and Single Particle Effects. D.A. Spong, C.L. Hedrick, M.D. Prochaska, J.-N. Leboeuf, and B.A. Carreras.
- 1C42. Multidimensional Autoresonant Three-wave Interactions in Space-Time Varying Plasmas. L. Friedland.
- 1C43. An L-H-Like Transition in a Tokamak SOL. R.H. Cohen and X.Q. Xu.
- 1C44. Low-Dimensional Representations for the Dynamics of L-H Transitions. W. Horton, G. Hu, and J.A. Krommes.
- 1C45. Drift-type Microinstabilities in High Beta Tokamaks. M. Artun and S.C. Cowley.
- 1C46. High Beta, Skin Current Tokamaks. T.H. Jensen, R.L. Miller, and Y.R. Lin-Liu.
- 1C47. Kinetic Effects on Particle and Heat Fluxes in Detached SOL Plasmas. O.V. Batishchev, X.Q. Xu, J.A. Byers, R.H. Cohen, S.I. Krasheninnikov, and T.D. Rognlien.
- 1C48. Computer Simulation of an MHD Dynamo. A. Kageyama and T. Sato.
- 1C49. Analytical and Numerical Solutions of the Tearing Modes Linear Stability Equation. R. Gatto, D. Hua, and S. Migliuolo.
- 1C50. Equilibrium and Stability Studies of Low Aspect Ratio Tokamaks. E.R. Solano, D.J. Strickler, J. Uglum, and P.H. Edmonds.
- 1C51. Spectra and Mode Structures of Global Drift Waves in Toroidal Geometry. S. Brunner and J. Vaclavik.

1D POSTER SESSION

Regency Ballroom

4:00 - 6:00 p.m.

- 1D1. Plasma-Neutral Interaction in Tokamak Divertor: "Gas Box" Model (Knudsen Limit). T.K. Soboleva and S.I. Krasheninnikov.
- 1D2. Electric Fields and  $E \times B$  Drifts Including the Tokamak Separatrix Region. T.D. Rognlien, N. Mattor, and R.H. Cohen.
- 1D3. Tellegen's Theorem Applied to Tearing Modes. S.N. Bhattacharyya and A. Sen.
- 1D4. Computational Studies of Ultra-short-pulse Reflectometry. B.I. Cohen, B.B. Afeyan, and T.B. Kaiser.
- 1D5. Semi-ideal Magnetohydrodynamics of a Tokamak Plasma. S. Bazdenkov, T. Sato, and K. Watanabe.

- 1D6. Considerations on Plasma Transport Barriers. T. Tajima and B. Coppi.
- 1D7. Advanced MHD Configurations in TFTR. J. Manickam, M. Bell, and R. Budny.
- 1D8. Normal Mode-Quasilinear-Mixing Length Model Transport Code. R.E. Waltz, W.D. Dorland, G.W. Hammett, and M. Kotschenreuther.
- 1D9. Electron Cyclotron Heating and Current Drive for Advanced-Tokamak Operation in ITER. A.H. Kritz, G.R. Smith, W.M. Nevins, and M.A. Makowski.
- 1D10. Three-Dimensional Calculations Using the Quiet Implicit PIC Method. R.A. Nebel, D.C. Barnes, and W.D. Nystrom.
- 1D11. Interpretive Treatment of Scrape-off-Layer Plasmas. J. Kesner and B. LaBombard.
- 1D12. Thermodynamic Aspects of Fluid Dynamics and Covariant Onsager Symmetry. J.M. Greene and P.J. Morrison.
- 1D13. Adaptive Gridding for Primitive MHD Simulations. D.D. Schnack, Z. Mikic, I. Lotatti, and P. Satyanarayana.
- 1D14. MHD Simulation of Coalescence Process of Spheromaks. T.H. Watanabe, B. Dasgupta, T. Sato, T. Hayashi, and K. Watanabe.
- 1D15. Broadening of Alpha Energy Spectrum Due to Cyclotron Instabilities. K.R. Chen.
- 1D16. Effect of Low MN Perturbations on Footprints of Field Lines on the Divertor Plates in Single-Null Divertor Tokamak. A. Verma, A. Punjabi, and A. Boozer.
- 1D17. RF Tokamak Plasma Confinement in Electron Cyclotron Frequency Range. S.A. Uryupin and V. Stefan.
- 1D18. Finite-Size Effects and Quasi-Crystallization of Vortices in the Hasegawa-Mima Equation. N. Kukharkin, S.A. Orszag, and V. Yakhot.
- 1D19. Bootstrap Current in Arbitrary Collisionality and Aspect Ratio Tokamaks. W.A. Houlberg, K.C. Shaing, and S.P. Hirshman.
- 1D20. Comparison of the Calculations of the Stability Properties of a Specific Stellarator Equilibrium with Different MHD Stability Codes. J.L. Johnson, Y. Nakamura, T. Matumoto, M. Wakatani, S.A. Galkin, V.V. Drozdov, A.A. Martynov, Yu. Yu. Poshekhonov, K. Ichiguchi, L. Garcia, B.A. Carreras, C. Nührenberg, and W.A. Cooper.
- 1D21. The Modeling of Non-Axisymmetric Halo Currents in Tokamaks. J. McCarrick and J.P. Freidberg.
- 1D22. Isolated Magnetic Islands in a High Temperature Tokamak Plasma. H.R. Wilson, J.W. Connor, and C.C. Hegna.
- 1D23. MHH Stellarator With the 2D Symmetry of the HSX Experiment. P.R. Garabedian.
- 1D24. Noether Derivation of Local Manley-Rowe Relations for Non-Eikonal Wave Fields. A.J. Brizard and A.N. Kaufman.
- 1D25. Casimir Invariants and Their Applications in Generic Turbulent Transport Problems. G. Hu and J.A. Krommes.
- 1D26. Generation of Ultra-Intense Magnetic Fields. G.A. Askar'an, S.V. Bulanov, F. Pegoraro, and A.M. Pukhov.
- 1D27. Aspects of Computational Thermally Collapsed States. G.G. Craddock, A.E. Koniges, J.L. Milovich, and T.D. Rognlien.
- 1D28. Parallelization of the Generalized Tokamak Simulator. G. Furnish and M.J. LeBrun.
- 1D29. Nonlinear Bounce-Averaged Kinetic Equation and Neoclassical Polarization Density. B.H. Fong and T.S. Hahm.
- 1D30. Nonlinear Theory of Collisionless Trapped Ion Modes. T.S. Hahm and W.M. Tang.
- 1D31. Renormalized Dissipation in Plasmas with Finite Collisionality. S.E. Parker and D. Carati.
- 1D32. Flux Limiting Due to Electron Impact Excitation Energy Loss. P.J. Catto, S. Krasheninnikov, and R.D. Hazeltine.
- 1D33. Scaling Laws for Two-Dimensional Fluid Neutral and Plasma Modeling of Divertors. J.W. Connor, P.J. Catto, and S. Krasheninnikov.
- 1D34. Dynamics of Electric Microfields at a Neutral Point. M. Berkovsky and J.W. Dufty.

- 1D35. Extraction of Alpha Particle Energy by Waves in the ICRF Range of Frequencies. M.C. Herrmann and N.J. Fisch.
- 1D36. Stability Analysis of Resistive Wall Kink Modes in Rotating Plasmas. R. Betti and J.P. Freidberg.
- 1D37. Computations of IBW Spectra and Induced Diffusion Rates in Toroidal Geometry. E.J. Valeo, N.J. Fisch, and D.W. Ignat.
- 1D38. MHD Simulations of ELMs in Divertor Tokamaks. H.R. Strauss.
- 1D39. The Extrapolated Performance of Fusion Reactors Based on First Principles Simulations with Kinetic Effects. M. Kotschenreuther and W. Dorland.
- 1D40. L-H Power Threshold Scalings. J.G. Cordey, W. Kerner, and O. Pogutse.
- 1D41. On the Existence of Scalar-Pressure Magnetostatic Equilibria. M. Tessarotto, J.L. Johnson, R.B. White, and L.-J. Zheng.
- 1D42. Analysis of Self-Consistent MHD Stable Operating Scenarios in the Tokamak Physics Experiment (TPX). P.T. Bonoli, M. Porkolab, and C. Kessel.
- 1D43. Collisional Relaxation of Electron Distribution Function in a Region of Stochastic Magnetic Field Lines. X.Z. Tang and A.H. Boozer.
- 1D44. Finite-Beta Effects on Toroidal Alfvén Eigenmodes Driven by Energetic Particles. R.A. Santoro and L. Chen.
- 1D45. Toroidal Coupling of Ideal MHD Instabilities. C.C. Hegna, J.W. Conner, R.J. Hastie, and H.R. Wilson.
- 1D46. Numerical Simulations of the Effect of the ExB Drift on Divertor Plasma Flows. D.R. McCarthy, S.I. Krasheninnikov, and D.J. Sigmar.
- 1D47. Inertial-Range Dynamics: Scaling Laws and Computational Methods. J.C. Bowman, B.A. Shadwick, and P.J. Morrison.
- 1D48. Evolution of Trapped Ion Temperature Gradient-Driven Convective Cells with Electric Field Shear. R.D. Sydora and P.H. Diamond.
- 1D49. Spontaneous Symmetry Breaking in Divertor Scrape-off Layers. G.M. Staebler.
- 1D50. Relativistic Effects in Energy Extraction From Alpha Particles. A. Fruchtman, N.J. Fisch, M.C. Herrmann, and E.J. Valeo.
- 1D51. Unstructured Mesh Model of the SOL Using Riemann-Delaunay Triangulation. A. Kuprat.

T U E S D A Y M O R N I N G

2A REVIEW TALK

Regency Ballroom

8:30 a.m. - 9:20 a.m.

Presiding: T.B. Kaiser

- 2A1. Plasma Physics Phenomena in ICF. R.L. Berger.

2B ORAL SESSION

Regency Ballroom

9:30 - 10:30 a.m.

Presiding: T.S. Hahm

- 2B1. Nonlinear 3D Simulation Studies of High-Beta Disruptions in TFTR. W. Park, E. Fredrickson, A. Janos, J. Manickam, W. Tang, and L. Zakharov.
- 2B2. Nonlinear Evolution of the Alpha Particle Driven Toroidicity-induced Alfvén Eigenmode. Y. Wu, R.B. White, Y. Chen, and M.N. Rosenbluth.

2C ORAL SESSION

Regency Ballroom

10:30 a.m. - 12:30 p.m.

Presiding: R. Fitzpatrick

- 2C1. Resistive Wall Stabilization of External Kink Modes in Tokamaks with Partial Poloidal Walls. D.J. Ward.
- 2C2. Resistive MHD Stability in Small Aspect Ratio Tokamaks. A.Y. Aydemir, R. Fitzpatrick, E. Solano, and F. Waelbroeck.
- 2C3. Nonlinear  $\omega^*$ -Stabilization of the  $m=1$  Mode in Tokamaks. B. Rogers and L. Zakharov.
- 2C4. New Parallel Velocity Shear Instability. J.M. Finn.

T U E S D A Y   E V E N I N G

RECEPTION

Regency Ballroom, Lower Lobby      6:00 - 7:00 p.m.

2D POSTER SESSION

Regency Ballroom

7:00 - 9:00 p.m.

- 2D1. Study of Mode Overlap Resonance for TAE Growth Rates. H.V. Wong, H.L. Berk, and B.N. Breizman.
- 2D2. Modeling of a High Fusion Power TFTR DT Supershot. R.V. Budny, M.G. Bell, R.E. Bell, C.E. Bush, Z. Chang, P.C. Efthimion, E. Fredrickson, L.C. Johnson, J. Manickam, D.C. McCune, H.K. Park, A.T. Ramsey, M.H. Redi, J. Schivell, S.D. Scott, J.D. Strachan, E.J. Synakowski, G. Taylor, T. Terpstra, and et.al..
- 2D3. Effects of Magnetic Field Nonuniformity on Energetic-ion Bernstein Waves. A.N. Kaufman, A.J. Brizard, and E.R. Tracy.
- 2D4. Numerical Simulation of ELM Phenomena. L.A. Charlton, B.A. Carreras, J.-N. Leboeuf, and P.H. Diamond.
- 2D5. Extended Quasilinear Model Applied to Energetic Particle-Alfven Wave Problem. J. Fitzpatrick, H.L. Berk, and B.N. Breizman.
- 2D6. Spectrum Study of Microturbulence in Tokamak Plasmas. J.Q. Dong and W. Horton.
- 2D7. "Continuum Approximation" for Impurity Transport in Tokamak Edge Plasma. D.J. Sigmar, S.P. Hirshman, S.I. Krasheninnikov, N.S. Krasheninnikova, and R.C. Ward.
- 2D8. Saturation of Toroidal Alfven Eigenmodes via Nonlinear Density Modulation. L. Chen and R.A. Santoro.
- 2D9. Nonlinear MHD Simulations of RFP Configurations With Thermal Energy Transport. C.R. Sovinec, S.C. Prager, and D.D. Schnack.
- 2D10. Anomalous Transport and Its Self-Similarity in the Ergodic Layer. G.M. Zaslavsky.
- 2D11. A Flexible Code Based on a Scalar Representation of Toroidal MHD. E.K. Maschke, G. Urquijo, and R.E. Denton.
- 2D12. Poloidal Flow Near the Tokamak Scrape-off Layer. H. Xiao, R.D. Hazeltine, P.J. Catto, and H.V. Wong.
- 2D13. Issues in Gyrofluid Turbulence Simulations. G.W. Hammett, M.A. Beer, W. Dorland, M. Kotschenreuther, and R.E. Waltz.
- 2D14. Simulations of Delta' and Neoclassical-MHD Driven Magnetic Islands in a Tokamak Plasma. T.A. Gianakon, J.D. Callen, and C.C. Hegna.
- 2D15. Accurate Treatment of Impurity Parallel Transport in NEWT1D. S.P. Hirshman and R.C. Ward.
- 2D16. Ion Cyclotron Absorption and Anomalous Transport in Turbulent Two-Ion Tokamak Plasmas. V. Stefan and S.A. Uryupin.
- 2D17. Interaction of Mode-Converted Ion-Bernstein Waves With Electrons in Tokamaks. A.K. Ram, A. Bers, S.D. Schultz, and V. Fuchs.
- 2D18. Transport Barrier in Very High Temperature Plasmas. G. Penn, B. Coppi, and W. Daughton.
- 2D19. Turbulence Propagation and Correlation Lengths. X. Garbet and R. Waltz.
- 2D20. A Parallel Gyrokinetic Field Solver for the Generalized Tokamak Simulator. M.J. LeBrun and G. Furnish.
- 2D21. Simple Current Sheets and Reconnection. S. Cowley, T. Squires, and E. Zweibel.
- 2D22. Simulation of Current Generation in a 3-D Plasma Model. F.S. Tsung, W.J. Nunan, and J.M. Dawson.
- 2D23. Some Theoretical Aspects of a "Linear Collider" Open-Ended Fusion Power System. R.F. Post.



- 2D24. Divertor Plasma Simulation With the UEDGE Code Including an Advanced Neutral Transport Model. F. Wising, D.A. Knoll, and T.D. Rognlien.
- 2D25. The Ignitor Experiment and Relevance of the Alcator C-Mod Confinement Results. F. Bombarda, B. Coppi, W. Daughton, L. Sugiyama, M. Greenwald, A. Hubbard, J. Irby, C. Fiore, J. Rice, S. Wolfe, and B. LaBombard.
- 2D26. 1D and 2D Analytical and Numerical Study of the Drift-Resistive-Ballooning Modes in the Scrape-Off-Layer in Tokamak Plasmas. S.V. Novakovski, P.N. Guzdar, J.F. Drake, and C.S. Liu.
- 2D27. Toroidal Electrostatic Guiding Center Plasmas. X. Shan and D. Montgomery.
- 2D28. MHD Stability of Reversed Shear Current Profiles. M.H. Hughes, M.W. Phillips, and F. Levinton.
- 2D29. Magnetic Field Calculation of (m,n) Modes at Mirnov Coil Locations. J-S. Kim, J.M. Greene, A. Turnbull, and M.S. Chance.
- 2D30. MHD Stability of Advanced Operating Regimes in Tokamaks. M.W. Phillips, M.H. Hughes, and F. Levinton.
- 2D31. Bifurcations and Intermittent MHD Activity. M. Ottaviani, C. Tebaldi, and F. Porcelli.
- 2D32. A Multi-Variable Core-Edge Simulation via 1D-2D Coupled Non-Linear Transport Codes. A. Tarditi, R.H. Cohen, G.G. Craddock, J.A. Crotinger, T.D. Rognlien, A.I. Shestakov, and G.R. Smith.
- 2D33. Scale-Invariant Plasma Motions Near X-Points. F. Pegoraro, B.N. Kuvshinov, M. Romanelli, and T.J. Schep.
- 2D34. Particle Control in DIII-D and TPX. M.E. Rensink, S.L. Allen, M.E. Fenstermacher, D.N. Hill, G.D. Porter, T.D. Rognlien, and G.R. Smith.
- 2D35. A New Paradigm in Cyclotron Emission and Absorption. D.G. Swanson.
- 2D36. Role of Edge Turbulence in Plasma Detachment. F.Y. Gang, S.I. Krasheninnikov, and D.J. Sigmar.
- 2D37. Multiple Mode Simulations of Energetic Particle-Alfven Eigenmode Dynamics. M.S. Pekker, H.L. Berk, and B.N. Breizman.
- 2D38. Modelling of TF Ripple Loss of Alpha Particles in TFTR DT Experiments. M.H. Redi, R.B. White, M.C. Zarnstorff, R.V. Budny, D. Darrow, D.C. McCune, J. Schivell, and S.J. Zweben.
- 2D39. Theory of the Electron Energy Pinch in Tokamak. M.B. Isichenko.
- 2D40. First Steps in the Development of Adaptive Grid Algorithms for Divertor Tokamak Plasmas. J.L. Milovich and A.E. Koniges.
- 2D41. Applications of Object Oriented Methods to Self-Consistent Plasma Simulation. J.R. Cary, I. Dexas, S. Hendrickson, J. Loui, R. McLean, S. Shasharina, and P. Stoltz.
- 2D42. Transport Simulations of Alcator-Cmod Plasmas. W. Daughton, B. Coppi, L.E. Sugiyama, M. Greenwald, F. Bombarda, and Y. Takase.
- 2D43. Toroidal Velocity Profiles and Core Transport in DT Plasmas in TFTR. C.E. Bush, R.E. Bell, E.J. Synakowski, M.G. Bell, R. Budny, Z. Chang, D. Ernst, P. Efthimion, E. Fredrickson, D. Mansfield, H.K. Park, S.D. Scott, J.D. Strachan, G. Taylor, M.C. Zarnstorff, S. Zweben, and TFTR. Group.
- 2D44. Intermittent Statistics in Turbulent Plasma Transport. J.A. Krommes and G. Hu.
- 2D45. Core-Localized Toroidal Alfven Eigenmodes. H.L. Berk, J.W. Van Dam, D. Borba, J. Candy, G.T.A. Huysmans, and S. Sharapov.
- 2D46. Noncanonical Hamiltonian Perturbation Theory. B.A. Shadwick, N.J. Balmforth, and P.J. Morrison.
- 2D47. Theory of Parametric Decay of Fast Waves With Finite Pump Wavelength. S.C. Chiu, R.I. Pinkser, and C.C. Petty.
- 2D48. K-epsilon Modelling of Compressible Neutral Gas Turbulence on a Heat Front in the Divertor Region. L. Vahala, G. Vahala, J. Morrison, S. Krasheninnikov, and D. Sigmar.

- 2D49. Density Edge Localized Mode in Rotating Plasmas. Y.-T. Lau.  
2D50. Lattice Boltzmann Approach to Temperature Driven Turbulence. G. Vahala, P. Pavlo, and L. Vahala.  
2D51. Accessibility of High- $l_1$ , High-beta Advanced Tokamak Operational Mode. Y.R. Lin-Liu, R.L. Miller, T.S. Taylor, and V.S. Chan.

W E D N E S D A Y M O R N I N G

3A REVIEW TALK

Regency Ballroom

8:30 a.m. - 9:20 a.m.

Presiding: P.J. Catto

- 3A1. Experimental Data for Edge Model Validation. G.M. McCracken.

3B ORAL SESSION

Regency Ballroom

9:30 - 10:30 a.m.

Presiding: B. Braams

- 3B1. Kinetic Modeling of SOL Plasmas. K. Kupfer, R.W. Harvey, and O. Sauter.  
3B2. Low Frequency Current Drive Utilizing Nonlinear and Spatial Inhomogeneity Effects. S. Rauf and J.A. Tataronis.

3C POSTER SESSION

Regency Ballroom

10:30 a.m. - 12:30 p.m.

- 3C1. Alfvén Instability and Edge Plasma Physics in TFTR. E.D. Fredrickson, Z. Chang, R.V. Budny, C.E. Bush, G.Y. Fu, E. Mazzucato, K.M. McGuire, R. Nazikian, H.K. Park, S.J. Zweben, and TFTR Team.
- 3C2. Off-Axis Electron Cyclotron Current Drive in ITER. R.W. Harvey, W.M. Nevins, Y.R. Lin-Liu, and F.W. Perkins.
- 3C3. Collisionless Magnetic Reconnection in Well-Confined Plasmas. B. Coppi and L.E. Sugiyama.
- 3C4. Neutral Transport Modeling of the DIII-D Divertor With DEGAS 2. G. Karney and D. Stotler.
- 3C5. Sawtooth Stabilization and Triggering of High-Beta Disruptions in TFTR. L. Zakharov, J. Manickam, W. Park, and B. Rogers.
- 3C6. Theory and Simulations of Fluctuation Reflectometry in Multi-Dimensional Inhomogeneous Plasmas. B.B. Afeyan, B.I. Cohen, and T.B. Kaiser.
- 3C7. Enforcement of Quasi-Neutrality and Momentum Conservation Using a delta-f Monte Carlo Code. M. Sasinowski and A.H. Boozer.
- 3C8. High Power Radiative Divertor Scenarios for ITER and TPX. B.J. Braams and S. Ohtsu.
- 3C9. Hamiltonian Description of Toroidal Magnetic Fields in Vacuum. J.W. Bates and H.R. Lewis.
- 3C10. Robust Multivariable Shape and Stability Control for ITER. L.D. Pearlstein, D.A. Humphreys, S.W. Haney, R.D. Bulmer, and J.A. Grottinger.
- 3C11. Toroidal Momentum Input to Tokamak Plasmas from Alpha Particles or Neutral Beams. F.L. Hinton and M.N. Rosenbluth.
- 3C12. Linear Stability of MHD Modes in Toroidally Rotating Tokamak Plasmas. M.S. Chu, J.M. Greene, R.L. Miller, A. Bondeson, and H. Luetjens.
- 3C13. Log-Additive Parameterisation of JET Electron Temperature, Density and Pressure Profiles. K. Imre, K.S. Riedel, and B. Schunke.
- 3C14. A Comparison of Monte Carlo and Fluid Approaches to Neutral Transport Modeling in Tokamak Edge Plasmas. D.P. Stotler, C.F.F. Karney, and S.I. Krasheninnikov.
- 3C15. Thermal Bifurcation of Scrape Off Layer Plasma and Divertor Detachment. S.I. Krasheninnikov, P.J. Catto, P. Helander, D.J. Sigmar, and T.K. Soboleva.
- 3C16. Linear Electrostatic Drift-Kinetic PIC Code for eta-i Modes in Toroidal Geometry. M. Fivaz, K. Appert, and J. Vaclavik.
- 3C17. RF Wave Effects on the Neoclassical Electron Distribution Function in Tokamaks. S.D. Schultz, A. Bers, and A.K. Ram.
- 3C18. The Issue of Internal Modes in Ignition Experiments. B. Coppi, P. Detragiache, and S. Migliuolo.
- 3C19. On the Noise Response of Chaotic Systems. J. Shaw, A. Joshua, and E.R. Tracy.
- 3C20. Can Inertial Electrostatic Confinement Work Beyond the Ion-Ion Collisional Time Scale?. W.M. Nevins.
- 3C21. The Role of Line Emission in Radiation Transport Calculations of Divertor Ablation Mitigated by a Vapor Shield. A.E. Koniges, D.C. Eder, A.S. Wan, B. Bazylev, I. Landman, and H. Wurz.

- 3C22. Combined Effects of Parallel Viscosity, Resistive Wall, and Toroidal Rotation on External Kink Modes in Tokamaks. R.A. Gerwin and J.M. Finn.
- 3C23. An Adaptive-hp Finite Element Grad-Shafranov Equation Solver. J.C. Wiley and D.W. Ross.
- 3C24. Stabilization of Wall Modes by Slow Plasma Rotation. A.H. Boozer.
- 3C25. Origins and Uses of Plasma Rotation. D. Montgomery and X. Shan.
- 3C26. MHD Stability of Anisotropic Plasma Containing Fast Drifting Particles. D.D. Ryutov.
- 3C27. Fast Particle Destabilization of TAE Modes. C.Z. Cheng and C.T. Hsu.
- 3C28. Existence of Core Localized Toroidal Alfvén Eigenmode. G.Y. Fu.
- 3C29. Mode Structure around an X-point. N. Mattor.
- 3C30. Emission Above the Ion Cyclotron Frequency in a Nonhomogeneous Magnetic Field. C. Riconda, B. Coppi, and G. Penn.
- 3C31. The Application of DCON to the Ideal MHD Stability Analysis of the Spherical Tokamak. A.H. Glasser, Y-K. M. Peng, and D.J. Strickler.
- 3C32. Scaling Law Based Studies of the Performance Capabilities of a Small Aspect Ratio Tokamak. P.M. Valanju, S.C. McCool, D.W. Ross, J.G. Uglum, and A.J. Wootton.
- 3C33. Time Dependent Studies of Advanced Tokamak Operating Scenarios Using a Theory-based Transport Model. J. Kinsey, A.H. Kritz, P. Bonoli, and M. Porkolab.
- 3C34. The Spherical Way--Physics and Scaling of Spherical Convergent Ion Focus Fusion Systems. T.N. Tiouririne, J.M. Finn, and D.C. Barnes.
- 3C35. Canonically Conjugate Phase Space Coordinates Appropriate for the Study of Stellarator Transport. H. Weitzner.
- 3C36. Three-Dimensional Shell Effects in delta-W Using the PEST-SPARK Code. M.S. Chance, J. Biulek, S.C. Jardin, J. Manickam, and G.H. Neilson.
- 3C37. The Relaxed-Cusp Configuration as an Approach to Magnetic Confinement. D.E. Baldwin.
- 3C38. Stabilization of Ballooning Modes With Sheared Toroidal Rotation in a Cylindrical Tokamak. E. Hameiri.
- 3C39. Pseudo-MHD Ballooning Modes in Tokamak Plasmas. J.D. Callen and C.C. Hegna.
- 3C40. Incorporation of the Reduced-Ion Impurity Module FMOMBAL into UEDGE. G.R. Smith, T.D. Rognlien, S.P. Hirshman, and D.A. Knoll.
- 3C41. On Nonlinear MHD-Stability of Toroidal Plasma Confinement Systems. V.P. Pastukhov and V.I. Ilgisonis.
- 3C42. MHD Stability of High-Beta Tokamak Equilibria. R.G. Kleva and J.F. Drake.
- 3C43. Turbulence Simulation With Self-Consistent Profiles via Coupled Codes. A. Shestakov, R.H. Cohen, X.Q. Xu, J.A. Crotinger, and L.L. LoDestro.
- 3C44. Non-perturbative Solution Method for the Gyrokinetic Fokker-Planck Equation. D. Gregoratto, M. Tassarotto, and L.-J. Zheng.
- 3C45. Equilibrium and MHD Stability of Plasmas with Toroidal Rotation in the DIII-D Tokamak. A.M. Popov, Y. Liu, A.V. Pedorenko, and A.D. Turnbull.
- 3C46. Tearing Mode Bifurcation: A Way to Control MHD Activity in Tokamak Plasmas. M. Zabiego, J.D. Callen, and Z. Chang.
- 3C47. Characteristics of LHD Configurations With Multi Layer Helical Coils. K. Ichiguchi, N. Nakajima, M. Okamoto, and O. Motojima.
- 3C48. Microinstability Analysis of DIII-D High Performance Discharges. G. Rewoldt, L. Lao, and W.M. Tang.
- 3C49. Transport in Steep Gradient Region. Y-B. Kim.
- 3C50. Effect of Alfvén Resonance on Low-Frequency Fast Wave Current Drive. C.Y. Wang, D.B. Batchelor, M.D. Carter, E.F. Jaeger, and D.C. Stallings.
- 3C51. Plasma Fluid Model with Finite Larmor Radius Effects. A.I. Smolyakov, I.O. Pogutse, and A. Hirose.