

**2000**  
**International**  
**Sherwood Fusion Theory**  
**Meeting**

March 27-29, 2000  
Los Angeles, California

**2000**  
**International**  
**Sherwood Fusion Theory Meeting**

**March 27-29, 2000**  
**UCLA**  
**Physics & Astronomy Department**  
**Los Angeles, California**

*Hosted by*  
**University of California, Los Angeles**

**United States Department of Energy**  
**Office of Fusion Energy Sciences**

**Executive Committee**

Scott Parker, *Chair*, U Colorado  
Roscoe White, *Secretary/Treasurer*, PPPL  
Ahmet Aydemir, U Texas  
Riccardo Betti, U Rochester  
Jeff Candy, GA  
Mark Carter, ORNL  
Liu Chen, UCI  
Ming Chu, GA  
Steve Eckstrand, DOE  
Jay Kesner, MIT  
David Newman, U Alaska  
Barrett Rogers, U Maryland  
Carl Sovinec, LANL  
Thomas Rognlien, LLNL

**Conference Secretarial Assistance**

Marcia Freels, ORNL  
Mona Garcia, LLNL  
Saralyn Stewart, U Texas  
Shelly Tsai, UCLA

**Local Arrangements Committee**

Steve Cowley, *Chairman*, UCLA  
Sharon Wong, *Conference Secretary*, UCLA  
Saralyn Stewart, *ex-officio*, U Texas  
Jean-Noel LeBoeuf, UCLA  
Michael Kissick, UCLA  
Ronald Waltz, GA

**Program Committee**

Frank Waelbroeck, *Chair*, U Texas  
Mike Beer, PPPL  
Steve Cowley, UCLA  
Barrett Rogers, U Maryland  
Carl Sovinec, LANL  
Xueqiao Xu, LLNL

# Meeting Presentations

**Sherwood 2000**  
Physics and Astronomy Department  
University of California, Los Angeles  
Los Angeles, California

## Monday Morning

Welcome 8:20 a.m. — S. Cowley, *Local Arrangement Chair*

---

1A **Review Paper** Knudsen Lecture Hall 1220B, 8:30 a.m. — 9:30 a.m.  
S. Cowley Presiding

1A01 Roger Blanford, *The Plasma Physics of Black Holes*

---

**Coffee:** 10:40 a.m.-11:00 a.m. — Outside of Knudsen Lecture Halls

---

1B **Oral Presentations** Knudsen Lecture Hall 1220B, 9:40 a.m. — 12:30 p.m.  
B. Rogers Presiding

1B01 *Landau Damping in Weakly Collisional Plasmas and Galaxies*  
A. Bhattacharjee, C.S. Ng and F. Skiff

1B02 *Nonlinear excitations of zonal flows by drift-wave turbulences in toroidal plasmas*  
Liu Chen, Zhihong Lin and Roscoe White

1B03 *Stabilization of FRC by the charge-uncovering effect*  
D.D. Ryutov

1B04 *Theory of the poloidal spin-up precursor to internal transport barrier formation*  
Gary M. Staebler

1B05 *Initial operation of the NSTX device*  
D.A. Gates, for the NSTX Team

---

Lunch Break: 12:30-2:00 p.m.

*Special Presentation:* H. Simon, Director, NERSC  
1:15-2:00 p.m.

*Chair,* M. Crisp

---

## Monday Afternoon

1C **Poster Presentations** 2:00-4:00 p.m. — Physics Department's Leonard Lounge  
Patio, Knudsen 2-222

1C01 *"Stellarator-pinch": a composite fusion concept*  
A.K. Sen

1C02 *UEDGE modeling of the effect of the new private flux region dome in DIII-D on divertor performance*  
N.S. Wolf, G.D. Porter, M.E. Rensink, T.G. Rognlien and W.P. West

1C03 *MHD simulations of spherical pinch and compact stellarators using M3D*  
H.R. Strauss, W. Park, X. Tang, G.Y. Fu and L.E. Sugiyama

1C04 *Modeling of plasma rotation in RF-heated tokamak plasmas*  
K.C. Shaing

1C05 *Nonlinear MHD Alfvén wave computations in cylindrical geometry*  
J.C. Wright, S.C. Prager and J.A. Tataronis

1C06 *Characteristics of silicon monoxide alignment layer for liquid crystals*  
Genae V. Jefferson and Karl Crandall

1C07 *Finite correlation time effects in kinematic dynamo problem*  
A.A. Schekochihin and R.M. Kulsrud

1C08 *Collisional transport coefficients in heated plasmas by high frequency electromagnetic waves*  
A. Tahraoui and A. Bendib

1C09 *Nonlinear fusion magnetohydrodynamics with finite elements*  
C.R. Sovinec and the NIMROD team

1C10 *Fast ignition of a dense shear-flow-stabilized Z-pinch*  
F. Winterberg

1C11 *Thermal lattice Boltzmann simulations for multi-species fluid equilibration*  
George Vahala, Linda Vahala and Pavol Pavlo

1C12 *Lyapunov exponents and transport in chaotic plasmas*  
Jean-Luc Thiffeault and Allen H. Boozer

Posters, Monday 2:00-4:00 p.m.

- 1C13 *Computation of FRC equilibria with flow*  
L.C. Steinhauer and D. Addink
- 1C14 *Effects of magnetic field perturbation on the threshold for the onset of stochasticity in ICRF-heated tokamak plasmas*  
M. Tribeche, R. Hamdi and T.H. Zerguini
- 1C15 *Analysis of laser-driven implosion of magnetized ICF target*  
M.V. Umansky and R. Betti
- 1C16 *Global ideal MHD stability and energetic particle transport in compact quasiaxial stellarators*  
M.H. Redi, A. Diallo, W.A. Cooper, G.Y. Fu, C. Nührenberg, R.B. White, M.C. Zarnstorff and the NCSX Team
- 1C17 *Large-scale behavior of the tokamak density*  
G.M. Zaslavsky, M. Edelman, H. Weitzner, B. Carreras, G. McKee and R. Bravenec
- 1C18 *Beat wave excitation in the ionosphere by HAARP and HIPAS*  
Alex Ryutov, Steve Cowley and Ernie Valeo
- 1C19 *Phase velocity of magnetic islands*  
F.L. Waelbroeck, J.W. Connor, H.R. Wilson and R.J. La Haye
- 1C20 *Anisotropic pressure in two-fluid models for toroidal systems*  
L.E. Sugiyama and W. Park
- 1C21 *A numerical model for collisions in the drift approximation that reproduces classical and neoclassical transport*  
Qudsia Quraishi and Scott Robertson
- 1C22 *A covariant approach to intense laser-plasma interactions*  
B.A. Shadwick and G.M. Tarkenton
- 1C23 *Scientific portable client/server applications framework*  
J.C. Wiley and NTCC Team
- 1C24 *Progress in the NIMROD high-S campaign*  
D.D. Schnack, S.E. Kruger and the NIMROD Team
- 1C25 *Drift mode calculations in nonaxisymmetric geometry*  
G. Rewoldt, L.P. Ku, W.M. Tang, N. Nakajima, H. Sugama and W.A. Cooper
- 1C26 *Toroidal MHD energy principle*  
L.E. Zakharov
- 1C27 *Tearing mode-induced Reynolds stress and the transition to improved confinement regimes*  
P.W. Terry, R. Gatto and C.C. Hegna

Posters, Monday 2:00-4:00 p.m.

- 1C28 *New physical applications and extensions to the GATO ideal MHD stability code*  
A.D. Turnbull, J. Bialek, M.S. Chance, M.S. Chu, K.J. Comer, J.R. Ferron, A.M. Garofalo,  
A.H. Glasser, J. Manikam, S. Medvedev, S. Tokida and S.K. Wong
- 1C29 *Gyrokinetic particle-in-cell simulation of Alfvénic ion-temperature-gradient modes in tokamak plasma*  
Gang Zhao and Liu Chen
- 1C30 *ICRF induced rotation and ripple loss in tore supra*  
R.B. White, F.W. Perkins, X. Garbet, L.G. Eriksson, V. Basiuk and C. Bourdelle
- 1C31 *Comparing turbulence simulation with experiment in DIII-D*  
David W. Ross, Ronald V. Bravenec, William Dorland, Michael A. Beer, G.W. Hammett,  
George R. McKee and Masanori Murakami
- 1C32 *Zonal flows in the toroidal ion temperature gradient mode turbulence*  
A.I. Smolyakov and P.H. Diamond
- 1C33 *A new method for ideal and resistive MHD stability analysis of tokamaks*  
Shinji Tokuda
- 1C34 *Study of electromagnetic wave propagation in a hot plasma in 2-dimensional nonuniform magnetic field*  
V.A. Svidzinski and D.G. Swanson
- 1C35 *Self-collision driving ion flux and radial electric field*  
W.X. Wang, F.L. Hinton and S.K. Wong
- 1C36 *Relaxed plasma-vacuum systems*  
G.O. Spies, D. Lortz and R. Kaiser
- 1C37 *Ion temperature gradient modes in helical systems*  
H. Sugama, T. Kuroda, R. Kanno and M. Okamoto
- 1C38 *Up/down asymmetries in double-null edge plasmas*  
M.E. Rensink, G.D. Porter and T.D. Rognlien
- 1C39 *Plasma equilibrium with anisotropic pressure in the magnetic field of a point dipole and its stability*  
Andrei N. Simakov, R.J. Hastie and Peter J. Catto
- 1C40 *Full radius electromagnetic gyrokinetic code: flux tube operation*  
R.E. Waltz, J. Candy, M.N. Rosenbluth and F.L. Hinton
- 1C41 *Modeling DIII-D-high- $\beta$  discharges with the NIMROD code*  
A. Tarditi, S.E. Kruger, D.D. Schnack and M.S. Chu
- 1C42 *New transport optimization targets for compact stellarators*  
D.A. Spong, S.P. Hirshman, D.B. Batchelor, L.A. Berry, J.F. Lyon, R. Sanchez,  
A.S. Ware and J.C. Whitson

Posters, Monday 2:00-4:00 p.m.

- 1C43 *Modulational interaction of lower-hybrid waves with a kinetic Alfvén mode*  
Defne Ucer and Vitali D. Shapiro
- 1C44 *Approximate homoclinic solutions of integrable PDEs*  
E.R. Tracy and A.R. Osborne
- 1C45 *MHD instabilities in Alcator C-mod ramp-up discharges with hollow pressure and current profiles*  
J.J. Ramos, Y. In, R.J. Hastie, M. Porkolab, S. Wolfe and A. Bondeson
- 1C46 *Towards a statistical theory of transport events*  
B. Wecht, S. Champeaux and P.H. Diamond
- 1C47 *Evaluating numerical derivatives of the equilibrium flux function without losing accuracy*  
M.J. Thomas and J.P. Freidberg
- 1C48 *Predictive transport simulations of internal transport barriers in JET and DIII-D*  
Ping Zhu, Glenn Bateman, Arnold H. Kritz and Wendell Horton
- 1C49 *M dependence of surface expansion coefficients*  
George L. Strobel
- 1C50 *Benchmarking of a parallel nonlinear resistive MHD code ParM3D*  
Xianzhu Tang, W. Park, Steve Jardin and Hank Strauss
- 1C51 *Stability of finite-n edge-localized modes*  
P.B. Snyder, H.R. Wilson, M.S. Chance, M.S. Chu, J.R. Ferron, L.L. Lao, E.J. Strait, A.D. Turnbull and X.Q. Xu
- 1C52 *Self-similar decaying profiles for reversed-field pinches*  
C.K. Rowdyshrub and R.A. Nebel
- 1C53 *Building the Teraflops/Petabytes production supercomputer center at NERSC*  
Horst D. Simon
- 1C54 *Density evolution and reconnection of twisted field lines in a star-disk magnetosphere*  
D.A. Uzdensky, A. Königl and C. Litwin
- 1C55 *Stability of liquid first walls with sheared flows*  
H.L. Rappaport, M. Kotschenreuther and R. Fitzpatrick
- 1C56 *Simulation studies of Alfvén instabilities due to energetic particles in DIII-D tokamak*  
L.J. Zheng, L. Chen and M.S. Chu

---

Beverage Break: 4:00-4:20 p.m.

*Leonard Lounge Patio, Knudsen 2-222*

---

- 1D **Poster Presentations** 4:00-6:00 p.m. — Physics Department's Leonard Lounge  
Patio, Knudsen 2-222
- 1D01 *Reactor relevant belt pinches*  
M. Kotschenreuther, W. Dorland and Q.P. Liu
- 1D02 *Data analysis and visualization for 3-D microturbulence simulations*  
W.M. Nevins
- 1D03 *Aspects of zonal flow dynamics, and gyrofluid simulations of electromagnetic effects on ITG turbulence*  
G.W. Hammett, P.B. Snyder, M.A. Beer, W. Dorland and B.N. Rogers
- 1D04 *Understanding the current driven external kink instability*  
J. Manickam
- 1D05 *Nonlinear interaction of drift wave turbulence with zonal flows*  
F.L. Hinton
- 1D06 *MH4D: a new algorithm for magnetohydrodynamics on a TETRAhedral domain*  
R. Lionello and D.D. Schnack
- 1D07 *Gyrokinetic  $\delta f$  particles in a finite element MHD simulation*  
Charlson Kim and Scott E. Parker and the NIMROD Team
- 1D08 *SOC dynamics coupled to classical diffusion and parallel transport*  
David E. Newman, Raul Sanchez and B.A. Carreras
- 1D09 *Shear flows with  $m \neq 0$  in full flux surface domains and their condensation into  $m=0$  zonal flows*  
K. Hallatschek
- 1D10 *Initial analysis of electromagnetic gyrokinetic turbulence simulation results*  
Scott E. Parker, Yang Chen and Samuel T. Jones
- 1D11 *Statistical theory of wave packets in Langmuir turbulence*  
C. Holland, P.H. Diamond and A. Smolyakov
- 1D12 *Symbolic cycles distribution for chaotic signals and turbulent fluctuations*  
M. Lehman and A.B. Rechester
- 1D13 *Using the genetic algorithm and singular value decomposition to find coils for NCSX*  
William H. Miner, Jr., Art Brooks and Wayne Reiersen
- 1D14 *Performance and stability projections for NSTX*  
S.C. Jardin, S. Kaye, J. Menard, W. Park and A.H. Glasser
- 1D15 *Nonuniform temperature and velocity profiles in kinetic theory*  
R.D. Hazeltine and S.M. Mahajan
- 1D16 *O-X-electron Bernstein wave conversion in spherical tori*  
Josef Preinhaelter, M. Irzak, Linda Vahala and George Vahala

Posters, Monday 4:00-6:00 p.m.

- 1D17 *Split-weight  $\delta f$  gyrokinetic particle simulation scheme for finite- $\beta$  plasmas*  
W.W. Lee, J.L.V. Lewandowski and T.S. Hahm
- 1D18 *Stabilization of a twisting interchange mode with shear flow*  
Gregory Howes and Steven Cowley
- 1D19 *Dynamic modeling of step-wise transport barrier formation in DIII-D NCS discharges*  
J.E. Kinsey, G.M. Staebler and R.E. Waltz
- 1D20 *Anomalous ion heating from ambipolar-constrained magnetic turbulence-induced transport*  
R. Gatto and P.W. Terry
- 1D21 *Ideal MHD ballooning stability in a local 3-D equilibrium*  
C.C. Hegna
- 1D22 *Effect of collisions on global evolution of ion temperature profile and ion heat transport during ITG instability*  
Sergei Novakovski and Chuan S. Liu
- 1D23 *Nonlinear gyrokinetic analysis of ion temperature gradient driven turbulence in DIII-D-like discharges*  
J.N. Leboeuf, J.M. Dawson, V.K. Decyk, C.L. Rettig, T.L. Rhodes and R.D. Sydora
- 1D24 *Electron cyclotron current drive efficiency in finite collisionality regime*  
Y.R. Lin-Liu, V.S. Chan and F.L. Hinton
- 1D25 *Alpha particle transport in three dimensional quasisymmetric systems*  
Y. Nishimura
- 1D26 *Direct calculation of electron heat transport in a stochastic magnetic field*  
E.D. Held and C.R. Sovinec
- 1D27 *Stabilization of the FRC tilt mode by a self-generated toroidal field*  
Yu A. Omelchenko
- 1D28 *How to decrease the pressure-driven Shafranov's shift in a tokamak*  
Victor I. Ilgisonis
- 1D29 *Scaling and bifurcation of the drift wave turbulence with the zonal flow collisional damping*  
M.A. Malkov, P.H. Diamond, M.N. Rosenbluth, F.L. Hinton, T.S. Hahm, Z. Lin and A.I. Smolyakov
- 1D30 *Electric field structure in 2-dimensional iterated mode conversion*  
Allan N. Kaufman and Eugene R. Tracy
- 1D31 *Design of the CATHY experiment*  
James D. Hanson, Gregory Hartwell and Stephen F. Knowlton
- 1D32 *Nonlocal linear stability of the parallel velocity shear instability in a sheared magnetic field*  
Daniel R. McCarthy, E. Fuselier and Sudip Sen

Posters, Monday 4:00-6:00 p.m.

- 1D33 *Neoclassical tearing mode simulations with NIMROD*  
T.A. Gianakon and the NIMROD team
- 1D34 *Use of an IEC device as a proton beam source*  
G.H. Miley, H. Momota and M. Nieto
- 1D35 *Ion cyclotron emission driven by energetic protons in ICRF heated plasmas*  
N.N. Gorelenkov, C.Z. Cheng and R. Nazikian
- 1D36 *Ideal MHD ballooning instability threshold for a quasi-helical stellarator*  
S.R. Hudson and C.C. Hegna
- 1D37 *Transport analysis calculations using Corsica*  
T.B. Kaiser, L.L. LoDestro, L.D. Pearlstein and T.A. Casper
- 1D38 *M3D studies of NSTX*  
W. Park, G.Y. Fu, J. Menard, D. Stutman, X.Z. Tang, H.R. Strauss and L.E. Sugiyama
- 1D39 *Stochastic ion heating by lower hybrid wave in stochastic magnetic field*  
H. Houili and T.H. Zerguini
- 1D40 *Physics issues for a plasma confined in a dipole field*  
J. Kesner, D.T. Garnier and M.E. Manuel
- 1D41 *Radial motion of highly conducting plasma sphere in magnetic field*  
V.V. Mirnov, O.D. Gurcan and D. Ucer
- 1D42 *Nonlinear effects in the calculation of electron cyclotron current drive in DIII-D*  
R.W. Harvey, R. Prater and Y.R. Lin-Liu
- 1D43 *Nonlinear evolution of ballooning modes and  $\beta$  limit disruptions: scaling with resistivity*  
R.G. Kleva and P.N. Guzdar
- 1D44 *Complex dynamics of the solar wind-magnetosphere ionosphere system*  
W. Horton
- 1D45 *Zonal field amplification by drift-Alfvén turbulence*  
I. Gruzinov, A. Das and P.H. Diamond
- 1D46 *Dielectronic recombination, ionization-recombination balance, and radiative energy exchange during electron-ion collisions in high-temperature plasmas*  
V.L. Jacobs
- 1D47 *Role of zonal flow on turbulent transport scaling*  
Z. Lin
- 1D48 *Equilibria of two-fluid plasmas and classical fluids*  
Eliezer Hameiri

Posters, Monday 4:00-6:00 p.m.

- 1D49 *Stability of virtual cathodes for the periodically oscillating plasma sphere (POPS)*  
R.A. Nebel and J.M. Finn
- 1D50 *The problem of profile consistency in negative or low magnetic shear equilibria in auxilarly heated tokamaks*  
E. Lazzaro and E. Minardi
- 1D51 *Shear flow generation by finite-beta drift-resistive ballooning modes*  
P.N. Guzdar and R.G. Kleva
- 1D52 *Weakly nonlinear Vlasov-Poisson theory with the continuous spectrum*  
P.J. Morrison and T.W. Yudichak
- 1D53 *Simulated poloidal rotation effects on kink modes for the electric tokamak*  
M.W. Kissick, J.N. Leboeuf, S.C. Cowley and J.M. Dawson
- 1D54 *Control matrix approach to the design and control of stellarators*  
H.E. Mynick and N. Pomphrey
- 1D55 *Controlling SOL transport by inducing plasma convection*  
P. Helander, S.J. Fielding, R.H. Cohen and D.D. Ryutov
- 1D56 *Implementation of vacuum region in NIMROD*  
S.E. Kruger, D.D. Schnack and the NIMROD Team

---

## Tuesday Morning

- 2A **Review Paper**                      UCLA Faculty Center, California Room, 8:30 a.m. — 9:30 a.m.  
Jean-Noel LeBoeuf Presiding
- 2A01 Gerald A. Navratil,                *Active Feedback Control Experiments on External MHD Modes*
- 
- 2B **Oral Presentations**                UCLA Faculty Center, California Room, 9:40 a.m. — 10:40 a.m.  
C. Sovinec Presiding
- 2B01 *Resistive X-point modes in tokamak boundary plasmas*  
J.R. Myra, D.A. D'Ippolito, X.Q. Xu and R.H. Cohen
- 2B02 *Modifications to edge plasmas from liquid-wall vapor*  
T.D. Rognlien and M.E. Rensink

---

**Coffee:** 10:40 a.m.-11:00 a.m. — Faculty Center, California Room Patio

---

- 2C **Poster Presentations** 11:00-1:00 p.m. — Faculty Center, Hacienda & Sierra Rooms
- 2C01 *Sawtooth oscillating accretion processes*  
P.S. Coppi and B. Coppi
- 2C02 *Kinetic stability analysis of very-high-beta plasmas*  
C. Crabtree, W. Horton, R. Weigel, H.V. Wong and J.W. Van Dam
- 2C03 *Macroscopic stability of perturbed screw pinch equilibria*  
Kate Comer, Jim Callen, Chris Hegna and Steve Cowley
- 2C04 *Ignition and appropriate confinement regimes in ignitor*  
A. Airoidi, B. Coppi, F. Bombarda, G. Cenacchi and L.E. Sugiyama
- 2C05 *A new theory explaining K capture, its applications and its implications*  
Andrew C. Angus
- 2C06 *Self-consistent chaotic transport in Vlasov-Poisson plasmas and shear flows*  
Diego del-Castillo-Negrete
- 2C07 *Fast particles spatial diffusion effects on RF driven current*  
K. Aoutou and T.H. Zerguini
- 2C08 *Kinetic ballooning modes in NSTX*  
C.Z. Cheng and N.N. Gorelenkov
- 2C09 *Stability of  $n=1$ ,  $m=1$  internal modes in ignitor plasmas with non-conventional  $q$ -profiles*  
P. Detragiache, S. Migliuolo and B. Coppi
- 2C10 *Coupling of GATO with the vacuum code for free boundary finite- $n$  global magnetohydrodynamic modes*  
M.S. Chu and M.S. Chance
- 2C11 *Analysis of the characteristic singularities of marginally stable modes in accretion disks*  
R. Bhatt and B. Coppi
- 2C12 *Role of liquid metal walls in MHD*  
A.Y. Aydemir
- 2C13 *Electron cyclotron resonance heating and heat pinch in tokamaks*  
Glenn Bateman, Arnold H. Kritz, Alexei Pankin and Doug McCune
- 2C14 *Resistive MHD stability of cylindrical plasma with arbitrary  $\beta$*   
S.A. Galkin, M.S. Chu, J.M. Greene and A.D. Turnbull

Posters, Tuesday, 11:00-1:00 p.m.

- 2C15 *Numerical simulations of toroidal Alfvén instabilities in a finite width annulus*  
Sean Dettrick, Liu Chen and Lin-jin Zheng
- 2C16 *Effect of magnetic ripple on neoclassical ion transport in tokamaks*  
C.S. Chang and Kunyoung Park
- 2C17 *Recent progress in the theory of zonal flows*  
H. Diamond
- 2C18 *Ballistic transport in tokamaks: role of zonal flows and three-dimensional structure of bursts*  
P. Beyrer, S. Benkadda, X. Garbet and P.H. Diamond
- 2C19 *BoRis - 3D SOL fluid modelling for W7-X*  
M. Borchardt, J. Riemann and R. Schneider
- 2C20 *Accretion model of "spontaneous" rotation of toroidal plasmas*  
B. Coppi
- 2C21 *Particle-magnetohydrodynamic hybrid simulation of energetic particle effects on MHD modes in tokamak plasmas*  
G.Y. Fu, N.N. Gorelenkov and W. Park
- 2C22 *Simulation of turbulence transport with electromagnetic effects*  
Yang Chen and Scott E. Parker
- 2C23 *Full-wave calculation of sheared poloidal flows induced by high harmonic ion Bernstein waves*  
Lee A. Berry, E.F. Jaeger and D.B. Batchelor
- 2C24 *A reduced model for edge and SOL drifts*  
D.A. D'Ippolito and J.R. Myra
- 2C25 *Geometric properties of passive random advection*  
S.A. Boldyrev and A.A. Schekochihin
- 2C26 *Numerical study of the effect of the hall term on magnetic reconnection*  
J. Breslau and S. Jardin
- 2C27 *Theoretical modeling of feedback stabilization of external MHD modes in tokamak geometry*  
M.S. Chance, M.S. Chu, M. Okabayashi and R. Hatcher
- 2C28 *Numerical study of tilt mode stability in field-reversed configurations*  
E.V. Belova, S.C. Jardin, H. Ji, M. Yamada and R. Kulsrud
- 2C29 *Tokamak, RFP and intermediate structures as minimum-dissipative relaxed states*  
R. Bhattacharya, M.S. Janaki and B. Dasgupta
- 2C30 *Equilibrium  $E \times B$  flows in nonlinear gyrofluid flux-tube simulations*  
M.A. Beer and G.W. Hammett

Posters, Tuesday, 11:00-1:00 p.m.

- 2C31 *Linux parallel gyrokinetic solver*  
J. Candy, R.E. Waltz, F.L. Hinton and M.N. Rosenbluth
- 2C32 *Photo-field fusion concept*  
adim S. Belyaev and Vladimir I. Arefyev
- 2C33 *Small scale flow and field dynamos in drift - Alfvén turbulence*  
Amita Das, Irina Gruzinov and P.H. Diamond
- 2C34 *Self-consistent Lagrangian chaotic transport in shear flows*  
John M. Finn and Diego del-Castillo-Negrete
- 2C35 *The problem of tearing mode flipping in response to external resonant currents*  
R. Coelho and E. Lazzaro
- 2C36 *Identification and estimation of the resistive wall mode in the DIII-D tokamak*  
I.N. Bogatu, D.H. Edgell, J.S. Kim, D.A. Humphreys, A.D. Turnbull, A. Garofalo and M.S. Chance
- 2C37 *Bifurcation analysis of systems exhibiting spontaneous pulse formation via passive mode-locking*  
G.A. Andrews and E.R. Tracy
- 2C38 *Modeling of ion absorption in the high harmonic fast wave experiments*  
Alessandro Cardinali
- 2C39 *Singularity theory study of overdetermination in models for L-H transitions*  
R. Ball and R.L. Dewar
- 2C40 *Update on NTCC python physics server*  
R.H. Cohen, R. Jong, J. Cary, K. Leutkemeyer, J. Kinsey, A. Kritz, J. Wiley and the NTCC demo team
- 2C41 *Self-consistent hyper-resistivity formalism and calculations from quasi-linear theory*  
H.L. Berk, L. LoDestro, L.D. Pearlstein and T.K. Fowler
- 2C42 *Nonlinear dynamics of feedback modulated magnetic islands in toroidal plasmas*  
R. Fitzpatrick and F.L. Waelbroeck
- 2C43 *Electron physics effects on MHD stability of field-reversed configurations*  
D.C. Barnes
- 2C44 *Effects of axial variation in helicon devices*  
M.D. Carter and R.H. Goulding
- 2C45 *A simple transport model for RFP*  
A. Bruno and J.P. Freidberg
- 2C46 *Electron heat conduction modifications due to long mean free path effects*  
Peter J. Catto and Magnus Grinneback

Posters, Tuesday, 11:00-1:00 p.m.

- 2C47 *Modes excited by high energy particle populations and involving magnetic reconnection*  
B. Coppi
- 2C48 *Collisional effects in delta-f codes*  
J.D. Callen, C.C. Hegna and S.E. Parker
- 2C49 *Wave transport as a mechanism for "non-locality" in drift turbulence*  
S. Champeaux, P.H. Diamond and M.N. Rosenbluth
- 2C50 *High poloidal mode number simulations of fast wave and ion Bernstein wave heating in tokamaks*  
P.T. Bonoli, E. Nelson-Melby, M. Porkolab, S.J. Wukitch and M. Brambilla
- 2C51 *Numerical simulation of Alfvén-ballooning modes in a dipole magnetic configuration*  
Julian C. Cummings, Linjin Zheng and Liu Chen
- 2C52 *Stellarator coil design*  
Allen H. Boozer
- 2C53 *Fully-implicit, Jacobian-free Newton-Krylov 2D reduced resistive MHD solver*  
L. Chacón, D.A. Knoll and J.M. Finn
- 2C54 *Low collisionality plasma stability*  
Harold Weitzner
- 2C55 *Heating of ions in an FRC with an ICRF rotating magnetic field*  
A.H. Glasser and S.A. Cohen
- 2C56 *Recent calculations of flux surface breakup in stellarator equilibria using the PIES code*  
D. Monticello, A. Pletzer, C. Jun, A. Reiman, M. Drevlak and P. Merkel

---

**\*\*\* Free Afternoon \*\*\***

V V V

**Tuesday Buffet**  
UCLA Faculty Center  
6:30 p.m. — 8:00 p.m.  
Sequoia Room

---

## Tuesday Evening

- 2D **Oral Presentations** UCLA Faculty Center, California Room, 8:00 p.m. — 9:30 p.m.  
Mike Beer Presiding
- 2D01 *Transport due to toroidal ITG turbulence: local scaling and nonlocal effects*  
A.M. Dimits, B.I. Cohen, W.M. Nevins, D.E. Shumaker
- 2D02 *Electromagnetic gyrokinetic turbulence simulations*  
W. Dorland, M. Kotschenreuther, F. Jenko and B.N. Rogers
- 2D03 *Can differentially rotating resistive walls stabilize killer MHD modes?*  
J.P. Freidberg and R. Betti
- 

## Wednesday Morning

- 3A **Review Paper** UCLA Faculty Center, California Room, 8:30 a.m. — 9:30 a.m.  
Frank Waelbroeck Presiding
- 3A01 Jim Meiss, *Transport in Chaotic Dynamical Systems*
- 

**Coffee:** 9:30 a.m.-9:40 a.m. — Faculty Center, California Room Patio

---

- 3B **Oral Presentations** UCLA Faculty Center, California Room, 9:40 a.m. — 11:10 a.m.  
Frank Waelbroeck Presiding
- 3B01 *Effect of the polarisation current on tearing mode stability*  
H.R. Wilson, J.W. Connor and F.L. Waelbroeck
- 3B02 *Low- $\beta$  MHD tokamak equilibria with poloidal transonic flow*  
R. Betti, J.P. Freidberg and M. Umansky
- 3B03 *Gyro-gauge kinetic theory*  
H. Qin, W.M. Tang and W.W. Lee