

Monday, May 18, 1981
8:30 AM, Sweeney Center Auditorium

INTRODUCTORY SESSION

Welcoming remarks by representatives
of sponsoring organizations and
presentations of IEEE Fellow
Certificates.

Monday, May 18, 1981
9:00 AM, Room 1

Oral Session 1A -- LASER PLASMA INTERACTION I (EXPERIMENTAL)
Session Chairman - B. H. Ripin

- 1A1-2 INVITED PAPER: HIGH IRRADIANCE STUDIES OF LASER-PRODUCED PLASMA AT THE SOREQ NUCLEAR RESEARCH CENTER - ISRAEL
Shalom Eliezer, Soreq, Israel
- 1A3 LASER-ABLATIVE ACCELERATION OF PLANAR TARGETS TO HIGH VELOCITY
S. P. Obenschain, et al, Naval Research Laboratory, Washington, DC
- 1A4 DOUBLE SHELL TARGET IMPLSION EXPERIMENTS AT OSAKA
N. Miyanaga, et al., Osaka, Japan
- 1A5 RESONANT FORWARD SCATTERING IN A LASER-PLASMA
C. E. Clayton, C. Joshi, A. Yasuda and F. F. Chen, University of California at Los Angeles, Los Angeles, California
- 1A6 FORWARD RAMAN INSTABILITY AND ELECTRON ACCELERATION
C. Joshi, J. M. Dawson, T. Tajima, N. A. Ebrahim, H. A. Baldis, University of California at Los Angeles, California
- 1A7 HOT ELECTRON TRANSPORT IN 10.6 m LASER INTERACTION WITH SOLID TARGETS
N. A. Ebrahim, H. A. Baldis and C. Joshi, Yale University, New Haven, Connecticut
- 1A8 DIRECT OBSERVATION OF LASER BEAM FILAMENTATION IN THE UNDERDENSE PLASMA
C. Joshi, C. E. Clayton, A. Yasuda and F. F. Chen, University of California at Los Angeles, California

Monday, May 18, 1981
9:00 AM, Room 2

Oral Session 1B -- NEUTRAL BEAM FOR FUSION RESEARCH
Session Chairman - Joel Fink

- 1B1 OPERATIONAL CHECKOUT OF THE FIRST DOUBLET III NEUTRAL BEAM INJECTOR SYSTEM
A. P. Colleraine, J. A. Fasolo, M. M. Holland, J. H. Kamperschroer, J. Kim, F. E. Levine, D. B. McColl, T. McMahon, A. Nerem, M. Otawka, R. Silagi, J. F. Tooker, and J. R. Treglio, General Atomic Company, San Diego, California
- 1B2 LONG PULSE ION SOURCE OPERATION FOR NEUTRAL BEAM INJECTION
D. M. Goebel and A. T. Forrester, University of California, Los Angeles, California
- 1B3 PLASMA GENERATOR DEVELOPMENT OF A 30s, 100A ION SOURCE FOR NEUTRAL BEAM APPLICATIONS
C. C. Tsai, G. C. Barber, C. W. Blue, W. K. Dagenhart, R. R. Feezell, W. L. Gardner, H. H. Haselton, J. A. Moeller, M. M. Menon, N. S. Ponte, P. M. Ryan, D. F. Schecter, W. L. Stirling, J. W. Whealton, and R. E. Wright, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1B4 COMMENTS ON THE GAS EFFICIENCY OF AN ION SOURCE IN A NEUTRAL BEAM INJECTOR
J. H. Fink, Lawrence Livermore National Laboratory, Livermore, California
- 1B5-6 INVITED PAPER: NEUTRAL BEAMS FOR DRIVEN TOKAMAKS
Larry Stewart, Exxon Nuclear Company at Princeton Plasma Physics Laboratory, Princeton, New Jersey

Monday, May 18, 1981
9:00 AM, Room 3

Oral Session 1C -- Intense Electron and Ion Beams I
Session Chairman - A. Wilson

- 1C1 AURORA MODIFICATIONS FOR POSITIVE POLARITY ION DIODE OPERATION
J. R. Boller and J. D. Shipman, Jr., Naval Research Laboratory, Washington, DC; G. A. Huttlin and A. G. Stewart, Harry Diamond Laboratories, Adelphi, Maryland
- 1C2 MODIFIED AURORA ION-DIODE EXPERIMENTS
R. A. Meger, F. C. Young, A. T. Drobot, R. J. Barker, J. J. Condon, G. Cooperstein, and S. A. Goldstein, Naval Research Laboratory, Washington, DC; R. Bixby, G. A. Huttlin, K. G. Kerris and D. A. Whittaker, Harry Diamond Laboratories, Adelphi, Maryland

- 1C3-4 INVITED PAPER: ION FILTERING IN AMPF ION DIODES
C. W. Mendel, Sandia National Laboratory, Albuquerque, New Mexico
- 1C5 NON-AXISYMMETRIC CONVERGENT VACUUM LINES
E. M. Waisman, Systems, Science and Software, LaJolla, California
- 1C6 RESISTIVE WALL EFFECT ON THE STABILITY OF PLANAR RELATIVISTIC BRILLOUIN FLOW
D. P. Chernin, Maxwell Laboratory, Incorporated, San Diego, California
- 1C7 RESISTIVE WALL INSTABILITIES ON RADIAL LINE ACCELERATORS
B. Godfrey and S. Arman, Mission Research Corporation, Albuquerque, New Mexico; B. Epstein, Sandia National Laboratory, Albuquerque, New Mexico
- 1C8 WITHDRAWN
- 1C9 EFFECTS OF CONDUCTING ANODE RINGS ON PINCH REFLEX DIODE BEHAVIOR
S. J. Stephanakis, R. J. Barker, S. A. Goldstein, W. F. Oliphant, Naval Research Laboratory, Washington, DC
- 1C10 A THIN ELECTROSTATICALLY TRAPPED REFLEXING ELECTRON CLOUD FOR ION ION BEAM NEUTRALIZATION
D. A. Phelps and W. W. Salisbury, Occidental Research Corporation, Irvine, California

Monday, May 18, 1981
9:00 AM, Room 4

Oral Session 1D -- HIGH POWER MICROWAVE GENERATION I
Session Chairman - J. L. Hirshfield

- 1D1-2 INVITED PAPER: FREE ELECTRON LASERS AT MODERATE BEAM CURRENTS
M. Z. Caponi, TRW, Redondo Beach, California
- 1D3 INFLUENCE OF THE TRANSVERSE VARIATION OF A SINUSOIDAL WIGGLER ON THE VARIABLE WIGGLER FREE ELECTRON LASER CHARACTERISTICS
M. Z. Caponi and C. Shih, TRW, Redondo Beach, California
- 1D4 STIMULATED FREE ELECTRON LASER RADIATION FROM SPONTANEOUS RADIATION
R. Sprangle, et al, Naval Research Laboratory, Washington, DC
- 1D5 CYCLOTRON EMISSION FROM AN INTENSE RELATIVISTIC ELECTRON BEAM ENHANCED BY A RIPPLED MAGNETIC FIELD
R. E. Shefer, et al, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 1D6 COLLECTIVE FREE ELECTRON STUDIES IN RESONANT PUMP CONDITIONS
K. Felch, et al, Ecole Polytechnique, Limeil, France
- 1D7 A RAMAN-FEL AMPLIFIER EXPERIMENT
D. B. McDermott, et al, Columbia University, New York, New York
- 1D8 STIMULATED Cerenkov RADIATION EXPERIMENTS
J. E. Walsh, et al, Dartmouth College, Hanover, New Hampshire
- 1D9 ADVANCES IN MILLIMETER MICROWAVE EMISSION FROM A MASER USING SYNTHETIC ATOMS
I. Alexeff and F. Dyer, University of Tennessee, Knoxville, Tennessee

Monday, May 18, 1981
9:00 AM, Room 5

Oral Session 1E -- FUSION REACTOR TECHNOLOGY
Session Chairman - G. H. Miley

- 1E1-2 INVITED PAPER: LIMITERS IN TOKAMAKS - DESIGN AND RESPONSE
G. R. Hopkins, General Atomic Company, San Diego, California
- 1E3 OPTIMIZATION OF A COMPACT BUNDLE DIVERTOR FOR FED
J. A. Rome, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1E4 MAGNETIC RIPPLE LOSSES AND STABLE INTOR EQUILIBRIA
D. K. Bhadra, F. J. Helton, T. W. Petrie, and J. M. Rawls, General Atomic Company, San Diego, California
- 1E5 LOW DENSITY CAVITY GAS FIREBALL DYNAMICS IN THE LIGHT ION BEAM TARGET DEVELOPMENT FACILITY
R. R. Peterson, K. J. Lee, and G. A. Moses, University of Wisconsin, Madison, Wisconsin
- 1E6 PLASMA MODELING OF THE ELMO BUMPY TORUS REACTOR
R. A. Krakowski, Los Alamos National Laboratory, Los Alamos, New Mexico
- 1E7 THE COMPACT-TOROID REACTOR (CTOR) CONCEPT
R. L. Hagenson, Science Applications, Incorporated, LaJolla, California; and R. A. Krakowski, Los Alamos National Laboratory, Los Alamos, New Mexico
- 1E8 PLASMA DIRECT CONVERTER FOR TANDEM MIRRORS
G. W. Shuy and D. M. Goebel, University of California at Los Angeles, Los Angeles, California
- 1E9 THE MODULAR STELLARATOR REACTOR (MSR)
R. L. Miller and R. A. Krakowski, Los Alamos National Laboratory, Los Alamos, New Mexico

Monday, May 18, 1981
9:00 AM, Room 6

Oral Session 1F -- MAGNETOFLUID DYNAMICS I
Session Chairman - W. E. Young

- 1F1 THE EFFECT OF WALL TEMPERATURE AND ARC SPOT FORMATION ON MHD GENERATOR PERFORMANCE
R. J. Rosa, Montana State University, Bozeman, Montana
- 1F2 THERMAL BREAKDOWN OF A SLAGGED ANODE IN AN MHD CHANNEL
R. Pollina, R. Larsen, and D. Westphal, Montana State University, Bozeman, Montana
- 1F3-4 INVITED PAPER: WEAR PHENOMENA EXHIBITED BY ELECTRODE METALS IN UTSI'S 4PPS MHD GENERATOR
D. A. Brosnan, J. F. Dace, and M. K. White, University of Tennessee Space Institute, Tullahoma, Tennessee
- 1F5 EXPERIMENTAL MEASUREMENT OF PLASMA PROPERTIES IN A COAL FIRED MHD COMBUSTION SYSTEM
M. P. Mathur, J. T. Yeh, R. J. Demski, and A. R. Planz, U. S. DOE/PETC, Laramie, Wyoming
- 1F6 HIGH B-FIELD, LARGE AREA RATIO MHD DUCT EXPERIMENTS
J. M. Smith, S. Wang, and J. L. Morgan, NASA Lewis Research Center, Cleveland, Ohio
- 1F7 A NEW FORMULATION FOR IMPLICIT, TWO-DIMENSIONAL, MARCHING MHD CHANNEL FLOW CALCULATIONS
E. P. del Casal, Martin Marietta; and D. W. Cott, Mountain States Energy, Laramie, Wyoming
- 1F8 TRANSIENT MODEL FOR A GENERALIZED MHD MACHINE
J. E. Kuo, University of Tennessee Space Institute, Tullahoma, Tennessee
- 1F9 A SURVEY OF POWER CONDITIONING AND CONSOLIDATION METHODS UTILIZED FOR MHD GENERATORS
R. Fowler, University of Tennessee Space Institute, Tullahoma, Tennessee
- 1F10 ANALYTICAL AND EXPERIMENTAL RESULTS OF TWO-DIMENSIONAL AND NONUNIFORM EFFECTS IN POWER TAKE-OFF REGION IN UTSI COAL FIRED MHD GENERATOR
M. Ishikawa, Y. C. L. Wu, and M. H. Scott, University of Tennessee Space Institute, Tullahoma, Tennessee
- 1F11 A MULTI-FRAME THREE-DIMENSIONAL ELECTRICAL CALCULATION FOR A SLAGGING MHD CHANNEL
B. L. Liu, Y. C. L. Wu, and L. W. Crawford, University of Tennessee Space Institute, Tullahoma, Tennessee

Monday, May 18, 1981
9:00 AM, Sweeney Center Auditorium

Poster Session 1P -- PLASMA DIAGNOSTICS I

- 1P1 IMPROVED PERFORMANCE OF THE HEAVY ION BEAM PROBE ON RENTOR
P. M. Schoch, K. Saadatmand, L. Solenstien, J. F. Lewis, J. G. Schatz, W. C. Jennings, and R. L. Hickok, Rensselaer Polytechnic Institute, Troy, New York
- 1P2 EBT HEAVY ION PROBE---THE EFFECT OF ALIGNMENT ON MEASUREMENT ACCURACY
L. Solenstien, F. M. Bieniosek, K. A. Connor and R. L. Hickok, Rensselaer Polytechnic Institute, Troy, New York
- 1P3 DIAGNOSTIC NEUTRAL BEAM SYSTEM FOR EBT
R. L. Copeland and J. C. Glowienka, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1P4 COMPARISON OF FLUX-ENERGY CALIBRATIONS FOR DIAMAGNETIC DIAGNOSTIC OF EBT ELECTRON RINGS FROM MHD AND CURRENT SHEET MODELS
K. H. Carpenter, University of Missouri - Rolla, Rolla, Missouri
- 1P5 A VARIABLE GEOMETRY ANALYZER WITH EXTERNAL MICROMETRICAL CONTROL
J. Puerta, E. Leal and G. Donoso, Universidad Simon Bolivar
- 1P6 PRIMARY ELECTRONS IN ELECTRON ENERGY DISTRIBUTIONS IN MULTIDIPOLE PLASMAS
G. R. Taylor and J. W. Sealock, James Madison University, Madison, Virginia
- 1P7 NITROGEN LASER ARRAYS FOR SCHLIEREN AND SHADOW DIAGNOSTICS OF A MAGNETIC-PINCH IMPLoding-CYLINDER X-RAY GENERATOR
C. W. Woods, J. D. Seagrave and L. A. Jones, Los Alamos National Laboratory, Los Alamos, New Mexico
- 1P8 SYNCHRONOUS DETECTOR UTILIZING A TRANSMISSION LINE SPATIAL SAMPLER PICOSECOND FET GATES
G. I. Chandler and C. Rodger, Los Alamos National Laboratory, Los Alamos, New Mexico
- Monday, May 18, 1981
9:00 AM, Sweeney Center Auditorium
- Poster Session 1Q - PLASMA WAVES, INSTABILITIES AND ANTENNAS
- 1Q1 RUNAWAY INSTABILITY IN THE PROTO-CLEO TORSTRON
J. N. Talmadge, J. H. Harris, S. C. Prager and J. L. Shohet, University of Wisconsin, Madison, Wisconsin

- 1Q2 ION MASS DEPENDENCE OF RF EMISSIONS AT THE GEOMETRIC MEAN PLASMA FREQUENCY
J. R. Roth, D. D. Smith and P. W. Hayman, University of Tennessee, Knoxville, Tennessee
- 1Q3 ICRF WAVE PROPAGATION IN A TANDEMIRROR REACTOR PLUG
T. K. Mau, and R. W. Conn, University of California, Los Angeles, California; and J. E. Scharer, University of Wisconsin, Madison, Wisconsin
- 1Q4 FAR-INFRARED LASER SCATTERING STUDIES OF TOKAMAK ICRF WAVE PROPAGATION
P. Lee, W. A. Peebles, R. J. Taylor and N. C. Luhmann, Jr., University of California, Los Angeles, California
- 1Q5 WAVEGUIDE COUPLER FOR ICRF HEATING
J. R. Wilson, P. L. Colestock, J. C. Hosea and D. Q. Hwang, Princeton University, Princeton, New Jersey
- 1Q6 NONFLUTE-LIKE EFFECTS IN THE INTERCHANGE MODE IN A MIRROR CONFINED PLASMA
M. Wickham, University of California, Irvine, California; and G. Vandegrift, University of California, Berkeley, California
- 1Q7 RADIATION OF ION ACOUSTIC SOLITONS
M. Khazai, B. Nelson, C. Chan and K. E. Lonngren, University of Iowa, Iowa City, Iowa
- 1Q8 EXCITATION OF MULTIPLE ION ACOUSTIC SHOCKS
C. Chan, M. Khazai, N. Hershkowitz and K. E. Lonngren, University of Iowa, Iowa City, Iowa

Monday, May 18, 1981
9:00 AM, Sweeney Center Auditorium

Poster Session 1R - GENERAL POSTER SESSION

- 1R1 CENTRIFUGAL MASS SEPARATION IN ROTATING, FULLY-IONIZED METAL PLASMAS
M. Geva, M. Krishnan, and J. L. Hirshfield, Yale University, New Haven, Connecticut
- 1R2 ELECTRIC AND HYDRODYNAMIC BEHAVIOR OF HOT AIR CHANNELS CREATED BY LONG ELECTRICAL DISCHARGES
R. F. Fernsler, M. Raleigh, S. Kainer, J. R. Greig, and R. E. Pechacek, Naval Research Laboratory, Washington, DC
- 1R3 MICROWAVE PLASMA GENERATION OF HYDROGEN ATOMS
R. Chapman, J. Filpus, T. Morin, J. Asmussen, R. Kerber, and M. Hawley, Michigan State University, Lansing, Michigan
- 1R4 PLASMA KINETIC MECHANISMS IN AN OXYGEN DISCHARGE
M. L. Brake and R. L. Kerber, Michigan State University, Lansing, Michigan
- 1R5 EVALUATION OF THE PUFF VALVE Z-PINCH AS A X-RAY LITHOGRAPHY AND MICROSCOPY SOURCE
A. Fisher, J. Bailey, and Y. Ettinger, University of California, Irvine, California; and R. Feder, International Business Machines, Yorktown Heights, New York
- 1R6 PLASMA CHEMISTRY OF 0.2 TO 10 MICRON GRAPHITE PARTICLES
J. W. Fisk, L. C. Sanchez, G. W. Cooper, and D. M. Woodall, University of New Mexico, Albuquerque, New Mexico
- 1R7 APPLICATIONS OF ION BEAM AND PLASMA SOURCES TO FUSION HARDWARE RESEARCH AND DEVELOPMENT
R. W. Stooksberry, Westinghouse Electric Corporation, Pittsburgh, Pennsylvania

Monday, May 18, 1981
7:30 PM, Room 1

Oral Session 2A -- LASER PLASMA INTERACTION II (THEORETICAL)
Session Chairman - S. Oenschain

- 2A1-2 INVITED PAPER: HOT ELECTRONS AND X-RADIATION FROM CO₂ LASER IRRADIATED TARGETS
G. Spillman, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2A3 APPARENT AND REAL THERMAL INHIBITION IN LASER PRODUCED PLASMAS
R. J. Mason, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2A4 THE STABILITY OF PLANETARY TYPE WAVES IN LASER FUSION TARGETS
A. J. Scannapieco, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2A5 A THREE-FLUID MODEL FOR CRITICAL SURFACE STRUCTURE IN LASER-PLASMA SYSTEMS
R. F. Stellingwerf, Mission Research Corporation, Albuquerque, New Mexico
- 2A6 CALCULATIONS OF BRILLOUIN BACKSCATTER IN LASER PRODUCED PLASMAS
W. M. Manheimer and D. G. Colombant, Naval Research Laboratory, Washington, DC
- 2A7 NONLINEAR INTERACTION OF LASER BEAMS WITH TURBULENT PLASMA
Y. S. Prahalad and M. L. Mittal, Bombay, India

- 2A8 KINETIC THEORY FOR A SHORT WAVELENGTH LASER
D. Hefferam and R. L. Liboff, Cornell University, Ithaca, New York
- 2A9 THE APPLICATION OF LASER RESONANCE SATURATION TO THE DEVELOPMENT OF EFFICIENT SHORT-WAVELENGTH LASERS
R. M. Measures and P. G. Cardinal, University of Toronto, Toronto, Canada
- Monday, May 18, 1981
7:30 PM, Room 2
- Oral Session 2B -- PLASMA HEATING
Session Chairman - J. Leon Shohet
- 2B1 ICRF OSCILLATIONS OF AN INHOMOGENEOUS PLASMA CYLINDER
T. E. Cayton and H. R. Lewis, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2B2 HEATING OF A DENSE PLASMA BY AN INTENSE RELATIVISTIC ELECTRON BEAM
J. V. Parker, K. B. Riepe, R. L. Sheffield, and M. D. Montgomery, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2B3 PRELIMINARY RESULTS OF 84 Ghz CYCLOTRON EMISSION DETECTION SYSTEM ON ISX-B
G. Elder, and H. Hsuan, Plasma Physics Laboratory, Princeton, New Jersey; and O. Eldridge, A. England, A. Kulchar, and J. Wilgen, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 2B4-5 INVITED PAPER: RF HEATING EXPERIMENTS ON PLT
J. Hosea, Plasma Physics Laboratory, Princeton, New Jersey
- 2B6-7 INVITED PAPER: RF CURRENT DRIVE IN FUSION PLASMA
M. PorKolab, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 2B8 HIGH FREQUENCY TOROIDAL DISCHARGES IN MERCURY-NOBLE GAS MIXTURES
M. D. Nahemow, Westinghouse Electric Corporation, Pittsburgh, Pennsylvania
- Monday, May 18, 1981
7:30 PM, Room 3
- Oral Session 2C -- INTENSE ELECTRON AND ION BEAMS II
Session Chairman - G. Kuswa
- 2C1 PROPAGATION OF ION BEAMS IN LASER-INITIATED DISCHARGE CHANNELS
J. N. Olsen and R. J. Leeper, Sandia National Laboratory, Albuquerque, New Mexico
- 2C2 ION BEAM-LASER IONIZATION GUIDE CHANNEL FORMATION IN THE PRESENCE OF NITROGEN
R. M. Measures, S. K. Wong and P. G. Cardinal, IFAS, University of Toronto, Toronto, Canada
- 2C3-4 INVITED PAPER: HYDRODYNAMICS OF FAST Z-PINCHES INTERACTING WITH PROPAGATING ION BEAMS
D. G. Colombant, S. A. Goldstein, D. Mosher, and F. L. Sandel, Naval Research Laboratory, Washington, DC
- 2C5 ANALYSIS OF THE HOSE INSTABILITY FOR INTENSE ION BEAM TRANSPORTED IN Z-DISCHARGE CHANNELS
P. F. Ottinger and S. A. Goldstein, Naval Research Laboratory, Washington, DC
- 2C6 DYNAMICS OF PARTIALLY NEUTRALIZED INTENSE RELATIVISTIC ELECTRON BEAMS
R. J. Faehl, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2C7 LINEAR ANALYSIS OF THE CONVERGING GUIDE ACCELERATOR
D. J. Sullivan and B. B. Godfrey, Mission Research Corporation, Albuquerque, New Mexico
- 2C8 HIGH VACUUM TRANSPORT EXPERIMENTS WITH SPACE CHARGED DOMINATED 80 KeV Xe^{+1} BEAMS
M. G. Mazarakis and D. K. Nikfarjam, Argonne National Laboratory, Argonne, Illinois
- 2C9-10 INVITED PAPER: NEW ADVANCES IN HEAVY ION ACCELERATORS FOR ICF
W. B. Herrmannsfeldt, Stanford University, California
- Monday, May 18, 1981
7:30 PM, Room 4
- Oral Session 2D -- COMPACT TOROIDS, FIELD-REVERSED RINGS
Session Chairman -
- 2D1 GREEN'S FUNCTION TECHNIQUE FOR COMPUTING COMPACT TOROID EQUILIBRIA IN CYLINDRICAL GEOMETRY
R. L. Spencer and C. G. Lilliequist, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2D2 RECONNECTION IN NONEQUILIBRIUM FIELD REVERSED CONFIGURATIONS
D. W. Hewett and C. E. Seyler, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2D3 3-DIMENSIONAL ASPECTS OF COMPACT TORUS FORMATION AND TRANSLATION
C. W. Hartman, G. Goldenbaum, E. H. A. Granneman, D. Prono, J. Taska, A. C. Smith, Jr., and W. Turner, Lawrence Livermore National Laboratory, Livermore, California
- 2D4 THE IMPLOSION OF A TOROIDAL PLASMA BY A CAPACITOR DISCHARGE
J. Katzenstein, Maxwell Laboratories, San Diego, California
- 2D5 PARTICLE AND ENERGY TRANSPORT IN A FIELD-REVERSED CONFIGURATION
T. Kammash and K. Nguyen, University of Michigan, Ann Arbor, Michigan
- 2D6-7 INVITED PAPER: EQUILIBRIUM DEVELOPMENT CALCULATIONS FOR COMPACT TORIIDS WITH COMPRESSION AND DIFFUSION
W. Grossman, Jr., Courant Institute, New York University, New York
- 2D8-9 INVITED PAPER: THE PRINCEN S-1 SPHEROMAK
M. Yamada, Princeton Plasma Physics Laboratory, Princeton, New Jersey
- Monday, May 18, 1981
7:30 PM, Room 5
- Oral Session 2E -- FUSION PRODUCT TRANSPORT
Session Chairman - J. R. McNally, Jr.
- 2E1 FUSION PRODUCT TRANSPORT IN TANDEM MIRROR REACTORS
T. Kammash and D. L. Galbraith, University of Michigan, Ann Arbor, Michigan
- 2E2 RADIAL ELECTRIC FIELD EFFECTS IN A FUSING TOKAMAK PLASMA
W. B. Downum, G. H. Miley, and C. Choi, University of Illinois, Urbana, Illinois
- 2E3 SOLUTION OF THE FOKKER-PLANCK TRANSPORT EQUATION BY MATRIX FACTORIZATION
A. Andrade and T. Oliphant, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2E4 ON THE SLOWING-DOWN OF ENERGETIC IONS IN CAT-D PLASMAS
J. C. DeVeaux, J. Galambos, E. Greenspan, and G. H. Miley, University of Illinois, Urbana, Illinois
- 2E5 TOROIDAL DIVERTOR DESIGN FOR EBT-S
L. P. Mai, W. C. Brenner, E. M. Iwinski, and G. Gibson, Westinghouse Research Laboratories, Pittsburgh, Pennsylvania
- Monday, May 18, 1981
7:30 PM, Room 6
- Oral Session 2F -- PLASMA WALL INTERACTIONS
Session Chairman - F. Schwirzke
- 2F1 BASIC INTERACTION BETWEEN PLASMA AND FIRST WALL OF TOROIDAL FUSION REACTOR
B. M. Ma, Iowa State University, Ames, Iowa
- 2F2 INDUCED PLASMA ASYMMETRY IN POLOIDAL DIVERTORS
U. Dayblege and M. Keilhacker, Max-Planck Institut fur Plasmaphysik, Garching, Federal Republic of Germany
- 2F3 MODEL OF LOW FREQUENCY ANOMALOUS PROPAGATION EFFECTS IN PARTICULATE CONTAMINATED PLASMA
W. A. Janos, Huntington Beach, California
- 2F4 ANALYSIS OF THE MICROSTRUCTURE OF TITANIUM COATINGS FORMED IN THE UCLA-MACROTOR
L. Keller, R. J. Taylor, and C. N. J. Wagner, University of California, Los Angeles, California; F. Schwirzke, Naval Postgraduate School, Monterey, California
- 2F5-6 INVITED PAPER: UNIPOLAR ARCING
F. Schwirzke, Naval Postgraduate School, Monterey, California
- 2F7 UNIPOLAR ARC STUDIES ON SELECTED MATERIALS
F. Schwirzke, J. H. Barker, III, M. T. Keville, R. W. Lautrup, and R. J. Rush, Naval Postgraduate School, Monterey, California; R. J. Taylor, University of California, Los Angeles, California
- 2F8 THE ROLE OF GRAIN BOUNDARIES IN COLD CATHODE ARC INITIATION
F. Ryan, S. Shedd, and F. Schwirzke, Naval Postgraduate School, Monterey, California
- Monday, May 18, 1981
7:30 PM, Sweeney Center Auditorium
- Poster Session 2P -- PLASMA DIAGNOSTICS II
- 2P1 CURRENT DENSITY PROFILE DIAGNOSTIC IN TOKAMAKS: APPARATUS DESIGN AND PRELIMINARY LABORATORY MEASUREMENTS
W. P. West, J. F. Baur and E. S. Ensberg, General Atomic Company, San Diego, California

- 2P2 VIDEO OBSERVATIONS IN DOUBLET III OF IMPURITY CHARGE STATE LOCATIONS IN THE DIVERTOR REGION OF MAGNETIC LIMITER CONFIGURATIONS
N. H. Brooks, A. J. Lieber and R. P. Seraydarian, General Atomic Company, San Diego, California
- 2P3 MEASUREMENT OF CENTRAL NICKEL DENSITY FROM NICKEL L-LINES IN THE DOUBLET III TOKAMAK
R. Groebner, G. Johns, S. Ejima, C. Hsieh, and T. Angel, General Atomic Company, San Diego, California
- 2P4 MEASUREMENTS OF ENERGY TRANSPORT THROUGH LASER-IRRADIATED TRANSPARENT TARGETS
E. A. McLean, S. H. Gold, S. P. Obenshain, J. A. Stamper, H. R. Griem, R. R. Whitlock, F. C. Young, J. Grun, B. H. Ripin, S. E. Bodner, S. J. Gitomer and M. K. Matzen, Naval Research Laboratory, Washington, DC
- 2P5 A DEVICE FOR SPECTRAL TIME AND SPACE RESOLVED MEASUREMENTS OF SOFT X-RAY EMISSION FROM TOKAMAK PLASMAS
N. Bogatu, et al., Bucharest, Romania
- 2P6 SUBKILOVOLT X-RAY SPECTRA FROM LASER-PRODUCED PLASMAS
J. P. Knauer, L. F. Chase, T. R. Fisher, and B. A. Watson, Lockheed Palo Alto Research Laboratory, Palo Alto, California
- 2P7 PERFORMANCE ANALYSIS AND DATA ACQUISITION SYSTEM FOR THE FAST ION DIAGNOSTIC EXPERIMENT ON PDX
R. Kaita, R. J. Goldston, D. Meyerhofer, J. Eridon, R. Lusen and D. L. Herndon, Princeton University, Princeton, New Jersey
- 2P8 ION ENERGIES IN THE TMX ENDPLUGS
D. Slaughter, Lawrence Livermore National Laboratory, Livermore, California
- 2P9 TOKAMAK DENSITY FLUCTUATION STUDIES USING A SINGLE-SHOT MULTIMIXER FAR-INFRARED SCATTERING APPARATUS
H. Park, C. X. Yu, W. A. Peebles and N. C. Luhmann, Jr., University of California, Los Angeles, California
- Monday, May 18, 1981
7:30 PM, Sweeney Center Auditorium
- Poster Session 2Q - HIGH POWER MICROWAVE GENERATION
- 2Q1 FREE ELECTRON LASER EXPERIMENT WITH BEAM PREBUNCHING
H. Boehmer, et al, TRW, Redondo Beach, California
- 2Q2 AN INTENSE BEAM MILLIMETER FREE ELECTRON LASER EXPERIMENT
S. H. Gold, et al, Naval Research Laboratory, Washington, DC
- 2Q3 ERGODIC BEHAVIOR OF PENDULUM MOTION AS IN A FREE ELECTRON LASER
C. J. Elliot, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2Q4 NUMERICAL SIMULATION OF ELECTRON BALLISTICS IN COMBINED MAGNETIC WIGGLER AND GUIDING FIELDS
K. D. Jacobs and G. Bekefi, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 2Q5 UNIVERSAL SMALL-SIGNAL THEORY FOR AMPLIFICATION OF AXISYMMETRIC MODES IN A GYRO TRAVELING WAVE AMPLIFIER
S. Y. Park and J. M. Baird, B-K Dynamics; J. L. Hirshfield, Yale University, New Haven, Connecticut
- 2Q6 LINEAR AND NONLINEAR ANALYSIS OF COMPETING MODES IN THE GYROMONOTRON
D. Dialetis and K. R. Chu, Naval Research Laboratory, Washington, DC
- 2Q7 VACUUM ELECTROMAGNETIC PROPERTIES OF TAPERED CYLINDRICAL RESONATORS
H. Derfler, et al, Varian Associates, California
- 2Q8 DESIGN CONSIDERATIONS FOR A MAGAWATT CW GYROTRON
K. J. Kim, et al, Naval Research Laboratory, Washington, DC
- 2Q9 CYCLOTRON HARMONIC MASER
J. L. Hirshfield, Yale University, New Haven, Connecticut
- 2Q10 AN INVERTED MULTIRESONATOR (N=6, 8) RELATIVISTIC MAGNETRON
A. Palevsky and G. Bekefi, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 2Q11 THE GYROCON RF GENERATOR FOR PLASMA HEATING APPLICATIONS
P. J. Tallerico, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2Q12 COLLECTIVE MICROWAVE EMISSION FROM INTENSE ELECTRON-BEAM INTERACTIONS: THEORY AND EXPERIMENT
G. Benford, D. Tzach, and K. Kato, University of California, Irvine, California; D. Smith, University of Colorado, Boulder, Colorado
- Monday, May 18, 1981
7:30 PM, Sweeney Center Auditorium
- Poster Session 2R -- NEUTRAL BEAMS
- 2R1 HYDROGEN ION SPECIES STUDY IN A MULTICUSP (BUCKET) SOURCE
K. N. Teung and K. W. Ehlers, Lawrence Berkeley Laboratory, Berkeley, California
- 2R2 HIGH CURRENT, STEADY STATE H- (D-) ION SOURCES FOR FUSION APPLICATIONS
K. Prelec, A. Hershcovitch, V. Kovarik, and R. McKenzie-Wilson, Brookhaven National Laboratory, Upton, New York
- 2R3 SITEX PLASMA GENERATOR SCALING STUDIES FOR LONG PULSE H-/D- BEAM GENERATION
W. K. Dagenhart and W.L. Stirling, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 2R4 DOUBLE BIFURCATION OPTIMIZATION FOR REDUCTION OF SECONDARIES FROM NEUTRALIZER PLASMA IONS
J. H. Whealton and R. W. McGaffey, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 2R5 DEFLECTION-MAGNET OPTICS FOR FUSION ENERGY BEAMS
O. A. Anderson, Lawrence Berkeley Laboratory, Berkeley, California
- 2R6 OPERATION AND PERFORMANCE OF THE PDX NEUTRAL BEAM INJECTION SYSTEM
H. W. Kugel, H. P. Eubank, T. Kozub, J. E. Rossmassler, G. Schilling M. Williams, and A. Von Halle, Princeton University, Princeton, New Jersey
- 2R7 ECH AND RF PRODUCED MAGNETIC MULTIPOLE ION SOURCES
W. F. DiVergilio, H. Goede, G. K. Komatsu, and T. C. Christensen, TRW, Redondo Beach, California
- Monday, May 18, 1981
9:00 AM, Room 1
- Oral Session 3A -- PLASMA FUSION RESEARCH I
Session Chairman - A. Kadish
- 3A1 A SELF-CONSISTENT MODEL FOR MAGNETIC WELLS GENERATED BY HIGH ENERGY IONS WITH NULL CANONICAL ANGULAR MOMENTUM
F. Gratton, Physics Department, Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Buenos Aires, Argentina; L. Lara, Physics Department, Facultad de Ciencias Exactas e Ingenieria, Universidad Nacional de Rosario, Argentina
- 3A2-3 INVITED PAPER: STATUS OF EBT PHYSICS
C. L. Hedrick, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 3A4-5 INVITED PAPER: THE EBT-P PROGRAM
W. B. Ard, McDonnell Douglas Corporation, St. Louis, Missouri
- 3A6 BULK PLASMA PROPERTIES OF EBT-S
W. A. Davis, F. W. Baity, Jr., L. Bighel, C. E. Bush, J. A. Cobble, R. J. Colchin, R. L. Copeland, H. O. Eason, J. C. Glowienka, G. R. Haste, D. L. Hillis, A. Komori, R. K. Richards, L. Solensten, T. Uckan, T.L. White, and J. B. Wilgen, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 3A7 HEATING STUDIES IN EBT-I/S
J. C. Glowienka, F. W. Baity, Jr., L. Bighel, C. E. Bush, J. A. Cobble, R. J. Colchin, R. L. Copeland, W. A. Davis, H. O. Eason, G. R. Haste, D. L. Hillis, A. Komori, R. K. Richards, L. Solensten, T. Uckan, T. L. White, and J. B. Wilgen, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 3A8 DESIGN OF ZT-40M
R. Dike, R. Gribble, C. Hammer, J. Melton, A. Schofield, and R. Wilkins, Los Alamos National Laboratory, Los Alamos, New Mexico
- 3A9 FUEL BEHAVIOR IN A MAGNETIC TARGET FOR IMPACT FUSION DRIVERS
I. Lindemuth, Los Alamos National Laboratory, Los Alamos, New Mexico
- Tuesday, May 19, 1981
9:00 AM, Room 2
- Oral Session 3B -- Advanced Fuel Fusion Technology I
Session Chairman - J. R. Roth
- 3B1-2 INVITED PAPER: PHYSICS OF FUSION FUEL CYCLES
J. R. McNally, Jr., Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 3B3 CONCEPTUAL DESIGN OF A D-D TOKAMAK REACTOR
K. Evans, Jr., C. C. Baker, J. Brooks, D. Ehst, P. Finn, J. Jung, R. Mattas, B. Misra, D. Smith, and H. Stevens, Argonne National Laboratory, Argonne, Illinois
- 3B4 D-D TOKAMAK REACTOR MODELING
D. C. Baxter, R. N. Byrne, J. E. Glancy, W. Grossmann, J. B. McBride, S. Tamor, A. W. Trivepiece, and C. E. Wagner, Science Applications, Incorporated, LaJolla, California
- 3B5 THE SIGNIFICANCE OF WALL LOADING LIMITS FOR ADVANCED FUEL FUSION REACTORS
J. R. Roth, University of Tennessee, Knoxville, Tennessee
- 3B6 ECONOMIC INCENTIVES FOR THE ADVANCED FUEL FUSION REACTOR-SAFFIRE
J. G. Gilligan and G. H. Miley, University of Illinois, Urbana, Illinois
- 3B7 TECHNOLOGY REQUIREMENTS FOR ADVANCED-FUEL COMPACT TORI REACTORS
J. G. Gilligan and G. H. Miley, University of Illinois, Urbana, Illinois

- 388 USE OF ADVANCED FUELS IN THE REVERSED-FIELD PINCH REACTOR (RFPR)
R. L. Hagenson and R. A. Krakowski, Los Alamos National Laboratory,
Los Alamos, New Mexico
- 389 TRITIUM-CATALYZED DEUTERIUM (TCD) FUSION REACTORS
E. Greenspan and G. H. Miley, University of Illinois, Urbana,
Illinois
- 3810 ON THE FEASIBILITY OF EXTRACTING 3He FROM SEMI-CATALYZED-DEUTERIUM
PLASMAS
E. Greenspan, G. H. Miley, and J. G. Gilligan, University of
Illinois, Urbana, Illinois
- Tuesday, May 19, 1981
9:00 AM, Room 3
- Oral Session 3C -- PLASMA FOCUS I
Session Chairman - W. H. Bostick
- 3C1 EVIDENCES FOR POSSIBLE PARTICLE TRAPPING IN A HIGH ENERGY PLASMA FOCUS
DEVICE
K. Hubner and K. Steinmetz, CNEN, Frascati, Italy; and J. P. Rager
and B. B. Robouch, University of Heidelberg, Heidelberg, Germany
- 3C2 EXPERIMENTS WITH D-He MIXTURE IN A 1 MJ PLASMA FOCUS DEVICE
A. Baehr, J. S. Brzosko, J. P. Rager, B. V. Robouch, and K.
Steinmetz, CNEN, Frascati, Italy
- 3C3 ELECTRONIC DENSITY AND TEMPERATURE MEASUREMENTS IN A HIGH ENERGY PLASMA
FOCUS
J. Appelt, L. Bilbao, J. Erhardt, G. Fischfeld, P. Kirchesch, J.
Klobukovska, J. P. Rager, and B. V. Robouch, CNEN, Frascati, Italy
- 3C4 PHYSICS ASPECTS OF AN EXPLOSIVE GENERATOR POWER PLASMA FOCUS
B. L. Freeman, R. S. Caird, D. J. Erickson, C. M. Fowler, and H. W.
Kruise, Los Alamos National Laboratory, Los Alamos, New Mexico
- 3C5 PRELIMINARY STUDIES OF TIME-DEPENDENT NEUTRON SPECTRA FROM DENSE PLASMA
FOCUS
H. W. Kruse and G. N. Minerbo, Los Alamos National Laboratory, Los
Alamos, New Mexico
- 3C6 COMPUTATION OF A HIGH-EXPLOSIVE-GENERATOR-DRIVE PLASMA FOCUS
I. Lindemuth and B. Freeman, Los Alamos National Laboratory, Los
Alamos, New Mexico
- 3C7 DENSITY MEASUREMENT OF 3-KJ FILIPPOVE TYPE PLASMA FOCUS WITH 4-CHANNELS
MACH-ZEHNDER INTERFEROMETER TECHNIQUE
T. Kobata, University of Tokyo, Tokyo, Japan
- 3C8 DPF SHEATH BEHAVIOR FOR TWO GUNS OPERATED IN A MERGING RECONNECTION
GEOMETRY
W. Bosze and D. M. Woodall, University of New Mexico, Albuquerque,
New Mexico
- 3C9-10 INVITED PAPER: NEUTRON YIELD ENHANCEMENT BY OPERATION OF MULTIPLE DPF
GUNS
M. Cowan, E. C. Cnare, R. Kaye, T. Burgess, Sandia National
Laboratory, Albuquerque, New Mexico; and D. M. Woodall, University of
New Mexico, Albuquerque, New Mexico
- Tuesday, May 19, 1981
9:00 AM, Room 4
- Oral Session 3D -- ULTRA FAST Z-PINCH
Session Chairman - G. Dahlbacka
- 3D1-2 INVITED PAPER: DESIGN OF TERRAWATT PULSED POWER GENERATORS FOR PLASMA
LOADS
G. B. Frazier, Physics International Company, San Leandro, California
- 3D3 OPERATIONAL CHARACTERISTICS OF THE BLACKJACK 5 PULSED POWER GENERATOR
G. M. Wilkinson, A. R. Miller, R. D. Richardson, M. Gerston, J.
Rauch, and W. Clark, Maxwell Laboratories, San Diego, California
- 3D4 AFWL SHIVA II PLASMA IMPLOSION RESEARCH
W. L. Baker, J. H. Degnan, J. F. Francis, R. P. Henderson, J. R.
Kerns, R. E. Reinovsky, and R. J. Sand, Air Force Weapons Laboratory,
Kirtland Air Force Base, New Mexico; D. L. Smith, Sandia National
Laboratory, Albuquerque
- 3D5 EXPERIMENTAL STUDY OF IMPLoding CYLINDERS
P. S. Sincerny, C. Gilman, R. Dukart, R. Stringfield, V. Buck, G.
James, and G. Dahlbacka, Physics International Company, San Leandro,
California
- 3D6 PULSE POWER ENERGY FLOW LOSSES IN ULTRA HIGH ENERGY DENSITY EXPERIMENTS
S. Singer, J. Brownell, and M. Fowler, Los Alamos National
Laboratory, Los Alamos, New Mexico
- 3D7 MAGNETOHYDRODYNAMIC (MHD) RAYLEIGH-TAYLOR INSTABILITY IN IMPLoding
HOLLOW PLASMA CYLINDERS
N. F. Roderick, B. J. Kohn, W. F. McCullough, C. W. Beason, Air Force
Weapons Laboratory, Kirtland Air Force Base, New Mexico; T. W.
Hussey, Sandia National Laboratory, Albuquerque, New Mexico
- 3D8-9 INVITED PAPER: REVIEW OF FAST Z-PINCH EXPERIMENTS ON TERRAWATT
GENERATORS
J. S. Pearlman, Maxwell Laboratories, San Diego, California
- 3D10 MAGNETIC SUMP FORMATION AND PLASMA CONFINEMENT BETWEEN Z-PINCHED
PLASMAS
A. L. Peratt, Maxwell Laboratories, San Diego, California; J. Green,
Institute for Plasma Research, Stanford University, Stanford,
California
- 3D11 A SIMPLE MODEL FOR NON-LINEAR INSTABILITY GROWTH IN IMPLoding HOLLOW
PLASMA LINERS
T. W. Hussey and L. Baker, Sandia National Laboratory, Albuquerque,
New Mexico
- 3D12 HIGH-RESOLUTION SUB-KILOVOLT X-RAY SPECTRA FROM PULSED-POWER PLASMAS
B. A. Watson, L. F. Chase, T. R. Fisher, J. P. Knauer, J. D. Perez,
and L. M. Tannenwald, Lockheed Palo Alto Research Laboratory, Palo
Alto, California
- 3D13 A SPATIAL IMAGING, GRAZING INCIDENCE SPECTROGRAPH FOR IMPLoding PLASMA
DIAGNOSTICS
R. J. Dukart, C. Gilman, H. Helava, Physics International Company,
San Leandro, California; R. E. McDonald, Spectral Precision,
Incorporated, Los Angeles, California
- 3D14 SUB-KILOVOLT SPECTRAL MEASUREMENTS ON IMPLoding WIRE PLASMAS
J. Riordan, M. Gersten, J. Pearlman, and J. Rauch, Maxwell
Laboratories, San Diego
- 3D15 PLASMA TEMPERATURE MEASUREMENTS FROM HIGHLY IONIZED ALUMINUM IMPLoding
WIRE PLASMAS
M. Gersten, J. Rauch, W. Clark, J. Katzenstein, R. Richardson, and G.
Wilkinson, Maxwell Laboratories, San Diego, California; D. Duston,
Naval Research Laboratory, Washington, DC
- Tuesday, May 19, 1981
9:00 AM, Room 5
- Oral Session 3E -- PLASMA WAVES, INSTABILITIES AND ANTENNAS (THEORETICAL)
Session Chairman - H. C. S Hsuan
- 3E1 STRUCTURE OF PLASMA WAVE ENERGY
T. Ohnuma, Tohoku University, Sendai, Japan; and T. Watanabe,
Hiroshima University, Hiroshima, Japan
- 3E2 ELECTROMAGNETIC WAVE EXCITATION IN A LARGE LABORATORY BEAM-PLASMA
SYSTEM
D. A. Whelan and R.L. Stenzel, University of California, Los Angeles,
California
- 3E3-4 INVITED PAPER: ELECTRON-ION TWO-STREAM INSTABILITY: NONLINEAR EFFECTS,
ION HEATING, AND BOUNDARY VALUE PROBLEM
A. Hirose, University of Saskatchewan, Saskatoon, Saskatchewan,
Canada
- 3E5 PLASMA WAVE PHENOMENA IN A MAGNETIC RECONNECTION EXPERIMENT
N. Wild, R. L. Stenzel and W. Gekeleman, University of California, Los
Angeles, California
- 3E6 POTENTIAL DOUBLE LAYERS FORMED BY ION BEAM REFLECTION
Y. Nakamura and R. L. Stenzel, Institute of Space and Aeronautical
Science, Tokyo, Japan; and R. L. Stenzel, University of California,
Los Angeles, California
- 3E7 NEUTRON AND X-RAY EMISSION FROM A HIGH FREQUENCY DISCHARGE
M. J. Rowe, B. D. Carter, and R. T. Schneider, RTS Laboratories,
Gainesville, Florida
- 3E8 AN ANALYTICAL MODEL FOR THE STABLE COMPRESSION OF BOUNDED NEUTRALIZED
ION BEAMS
H. Chung, D. A. Phelps and D. B. Chang, Occidental Research
Corporation, Irvine, California
- 3E9 FOUR-WAVE INTERACTIONS IN PLASMAS REVISITED
F. Verheest, Rijksuniversiteit Gent, Gent, Belgium
- 3E10 GENERALIZED METHODS OF STABILITY ANALYSIS
C. Powell, FWG Associates, Tullahoma, Tennessee
- 3E11 WAVEGUIDE MODES OF A WARM LOSSY TRANSVERSELY DRIFTING PLASMA WITH A
STRONG MAGNETIC FIELD
R. Prasad and D. Kalluri, Birla Institute of Technology, Ranchi,
India
- Tuesday, May 19, 1981
9:00 AM, Room 6
- Oral Session 3F -- MAGNETIFLUID DYNAMICS II
Session Chairman - R. J. Rosa
- 3F1-2 INVITED PAPER: EARLY REALIZATION OF MHD POWER GENERATION
S. Way, Montana Energy and MHD R&D, Inc., Butte, Montana
- 3F3 DISK GENERATORS FOR OPEN-CYCLE BASE-LOAD POWER GENERATION
J. D. Teare, and J. F. Louis, Massachusetts Institute of Technology,
Cambridge, Massachusetts

- 3F4 DISK GENERATORS FOR CLOSED-CYCLE MHD POWER SYSTEMS
W. J. Loubky, B. Misra, Y. Kobayashi, and J. F. Louis, Massachusetts
Institute of Technology, Cambridge, Massachusetts
- 3F5 MHD CHANNEL EXPERIMENTS
D. H. Archer, R. H. Lunn, A. B. Turner, and W. E. Young, Westinghouse
Research Laboratories, Pittsburgh, Pennsylvania
- 3F6 RADIOFREQUENCY IONIZATION TESTS WITH HELIUM FLOW
M. E. Talaat, University of Maryland, College Park, Maryland
- 3F7 EFFICIENCIES AND REQUIRED POWER EXTRACTION RATIOS FOR CLOSED-CYCLE MPD
POWER SYSTEMS
M. E. Talaat, University of Maryland, College Park, Maryland
- 3F8 COMBUSTOR PINHOLE CAMERA
A. B. Witte, and R. A. Briones, TRW, Redondo Beach, California
- 3F9 TWO-DIMENSIONAL STABILITY ANALYSIS FOR AN IMPLoding PLASMA SHELL
S. J. Han, and J. Brownell, Los Alamos National Laboratory, Los
Alamos, New Mexico
- 3F10 SPATIALLY PERIODIC, FORCE-FREE MAGNETIC FIELDS WITH RESISTIVE DECAY
R. X. Meyer, Aerospace Corporation
- 3F11 THERMAL ENERGY EXTRACTION FROM THE TOKAMAK FUSION REACTOR DIVERTOR FOR
MHD AND FUEL-CELL POWER
K. Denno, New Jersey Institute of Technology, Newark, New Jersey
- 3F12 CHARACTERIZATIONS OF THE TOKAMAK FUSION REACTOR DIVERTOR PLASMA FOR MHD
ENERGY EXTRACTION
K. Denno, New Jersey Institute of Technology, Newark, New Jersey
- Tuesday, May 19, 1981
9:00 AM, Sweeney Center Auditorium
Poster Session 3P -- LASER PLASMA INTERACTION
- 3P1 STRUCTURE OF SHOCK IMPLSION IN A PLASMA
D. D. Holm, S. J. Johnson and K. E. Lonngren, Los Alamos National
Laboratory, Los Alamos, New Mexico
- 3P2 STIMULATED BACKSCATTER MEASUREMENTS ON HELIOS USING A DOUBLE- PULSE
TECHNIQUE
D. E. Casperson and D. W. Forslund, Los Alamos National Laboratory,
Los Alamos, New Mexico
- 3P3 ANALYTIC FORMULAE FOR STOPPING POWER OF ONE DIMENSIONAL ELECTRON
DISTRIBUTIONS IN HIGH Z MATERIAL
D. Forslund and J. C. Comly, Los Alamos National Laboratory, Los
Alamos, New Mexico
- 3P4 LASER INDUCED BREAKDOWN OF ARGON AT 0.35 m
D. I. Rosen and G. Weyl, Physical Sciences, Incorporated, Woburn,
Massachusetts
- 3P5 ION TEMPERATURE AND VELOCITY DISTRIBUTION OF A LASER PRODUCED PLASMA
David Seagal, University of California, Irvine, California; Pinhas
Avivi, Hebrew University, Jerusalem, Israel
- 3P6 A PLASMA FILTER TO IMPROVE HIGH-POWER LASER BEAM QUALITY
F. S. Felber and D. P. Chernin, Maxwell Laboratories, San Diego,
California
- 3P7 NON-STATIONARY SELF-FOCUSING OF A LASER PULSE IN A COLD DENSE PLASMA
A. Schmitt and R. S. B. Ong, University of Michigan, Ann Arbor,
Michigan
- 3P8 OPTICAL MIXING STUDIES OF ION WAVE SATURATION
C. Pawley, N. C. Luhmann, Jr., and W. A. Peebles, University of
California at Los Angeles, California
- 3P9 MICROWAVE-PLASMA INTERACTION STUDY OF RESONANCE ABSORPTION PRODUCED HOT
ELECTRON
A. Y. Lee et al., University of California at Los Angeles, California
- Tuesday, May 19, 1981
9:00 AM, Sweeney Center Auditorium
Poster Session 3Q -- INTENSE ELECTRON AND ION BEAMS I
- 3Q1 MAGNETICALLY INSULATED ION DIODE DEVELOPMENT FOR LIGHT ION FUSION
J. M. Neri, D. A. Hammer, and J. B. Greenly, Cornell University,
Ithaca, New York
- 3Q2 A NEW MAGNETICALLY INSULATED EXTRACTION ION DIODE FOR USE ON HIGH POWER
MITL SYSTEMS
J. Maenchen, D. A. Hammer and J. B. Greenly, Cornell University,
Ithaca, New York
- 3Q3 PROGRESS TOWARD CHARACTERIZATION OF PARTICLE DYNAMICS IN A
MAGNETICALLY-INSULATED ION DIODE
J. B. Greenly, D. A. Hammer, Y. Maron, Y. Nakagawa and H. Sheldon,
Cornell University, Ithaca, New York
- 3Q4 THE EFFECT OF NEGATIVE ION LOSSES ON THE MAGNETICALLY INSULATED STATE
J. Swegle, Sandia National Laboratory, Albuquerque, New Mexico
- 3Q5 SPECTROSCOPIC INVESTIGATION OF SURFACE-FLASHOVER TYPE ANODE PLASMA IN A
MAGNETICALLY INSULATED ION DIODE
R. Pal, D. A. Hammer, and R. N. Sudan, Cornell University, Ithaca,
New York
- 3Q6 EFFECTS OF ANODE-CATHODE PLASMA ON MULTI-PULSE ELECTRON BEAM GENERATION
B. Fell, R. J. Comisso, V. Scherrer, and I. M. Vitkovsky, Naval
Research Laboratory, Washington, DC
- 3Q7 SMALL DIAMETER PINCH-REFLEX DIODE BEHAVIOR WITH PLASMA EROSION SWITCH
BEAM FRONT SHARPENING
W. F. Oliphant, H. U. Karow, S. J. Stephanakis, R. A. Meger, S. A.
Goldstein, and G. Cooperstein, Naval Research Laboratory, Washington,
DC
- 3Q8 SIMULATION OF AN AMPFION DIODE FOR VARIOUS PBFA II OPTIONS
D. B. Seidel, J. P. Vandevender, and C. W. Mendel, Jr., Sandia
National Laboratory, Albuquerque, New Mexico
- 3Q9 AN 1MeV INTENSE PULSED PARTICLE BEAM ACCELERATOR
N. Y. Wang, IAE, Beijing, China
- 3Q10 A CAPILLARY DISCHARGE PLASMA SOURCE
D. D. Hinselwood, Massachusetts Institute of Technology, Cambridge,
Massachusetts; S. A. Goldstein, JAYCOR, Alexandria, Virginia
- 3Q11 COMPUTER SIMULATION OF LONGITUDINAL INSTABILITIES IN CHARGED PARTICLE
BEAMS
A. Sternlieb, J. Bisognano, L. Smith, Lawrence Livermore National
Laboratories, Berkeley, California; J. I. Haber, Naval Research
Laboratory, Washington, DC
- 3Q12 LONGITUDINAL AND TRANSVERSE COUPLING IN ACCELERATOR BEAM PLASMAS
G. Krafft, J. W. K. Mark, L. Smith, and T. F. Wang, Lawrence
Livermore National Laboratories, Berkeley, California
- 3Q13 HEAVY-ION INERTIAL FUSION: SUGGESTED EXPERIMENTS ON BEAM DEPOSITION,
FOCUSING AND TRANSPORT
J. W.-K. Mark, W. M. Fawley, S. S. Yu, Lawrence Livermore National
Laboratory, Livermore, California; A. Garren and G. Krafft, Lawrence
Livermore National Laboratory, Berkeley, California
- 3Q14 HEAVY ION BEAM INTERACTION AND ENERGY PARTITION IN THE INITIAL STAGES
OF ICF TARGET IRRADIATION
M. Stauber Grumman, P. Suh, General Atomic Company, San Diego,
California; D. Harris, G. Miley, University of Illinois, Urbana,
Illinois
- 3Q15 IRRADIATION SYMMETRY OF SPHERICAL HEAVY ION DRIVEN ICF TARGETS
R. A. Sachs, Science Applications, Incorporated, McLean, Virginia
- 3Q16 HIGH GAIN TARGETS DRIVEN BY DUAL ENERGY HEAVY IONS
G. R. Magelssen, Argonne National Laboratory, Argonne, Illinois
- Monday, May 18, 1981
2:00 PM, Room 1
Oral Session 4A --PLASMA FUSION RESEARCH II
Session Chairman - I. Lindemuth
- 4A1 AN AXISYMMETRIC UPGRADE IN MFTF-B
K. I. Thamassen, Lawrence Livermore National Laboratory, Livermore,
California
- 4A2 QUADRUPOLE TANDEM MIRRORS WITH THERMAL BARRIERS
R. S. Devoto, Lawrence Livermore National Laboratory, Livermore,
California
- 4A3 END-CELL STABILITY AND TMX CONFINEMENT
R. P. Drake, J. F. Clauser, F. H. Coensgen, D. L. Correll, W. F.
Cummins, J. C. Davis, J. H. Foote, A. H. Futch, R. K. Goodman, D. P.
Grubb, E. B. Hooper, A. L. Hunt, R. H. Munger, W. E. Nexsen, W. L.
Pickles, P. Poulsen, T. C. Simonen, D. R. Slaughter, and B. W.
Stallard, Lawrence Livermore National Laboratory, Livermore,
California
- 4A4 THE EFFECT OF END CELL INSTABILITIES IN TMX
P. Poulsen, T. A. Casper, D. P. Grubb, T. D. Rognlien, and G. R.
Smith, Lawrence Livermore National Laboratory, Livermore, California
- 4A5 CENTRAL CELL PHYSICS IN TMX
E. B. Hooper, Jr., S. L. Allen, T. A. Casper, R. P. Drake, D. P.
Grubb, G. Gryczkowski, G. A. Hallock, R. S. Hornady, C. V. Karmendy,
Jr., O. T. Strand, and W. E. Nexsen, Lawrence Livermore National
Laboratory, Livermore, California
- 4A6-7 INVITED PAPER: STATUS OF STELLARATOR RESEARCH
J. L. Johnson, Princeton University, Princeton, New Jersey
- 4A8 ACTIVE TOKAMAK LIMITERS: SYMMETRIZING THE EDGE PLASMA
R. W. Motley, Princeton University, Princeton, New Jersey
- 4A9 EQUILIBRIUM FIELD FOR HIGHLY ELONGATED DEE PLASMAS IN DOUBLET III
H. Yokomizo, M. Nagami, M. Shimada, M. Maeno, H. Yodshida, K. Ioki,
S. Izumi, K. Shinya, N. Fujisawa, S. Konoshima, S. Seki, A.
Kitsunezaki, Japan Atomic Energy Research Institute, Tokyo, Japan,
Doublet III Group, General Atomic Company, San Diego, California

Tuesday, May 19, 1981
2:00 PM, Room 2

Oral Session 4B -- ADVANCED FUEL FUSION TECHNOLOGY II
Session Chairman - J. R. Roth

- 4B1 NEUTRONS FROM BURNING $11\text{B} + \text{p}$
E. Norbeck, University of Iowa, Iowa City, Iowa
- 4B2 SYNCHROTRON RADIATION IN ADVANCED FUEL REACTORS
S. Tamor, Science Application, Incorporated, LaJolla, California
- 4B3 FAST WAVE HEATING OF T AND 3He IN ADVANCED FUEL PLASMAS
T. E. Blue, G. H. Miley, and E. F. Splitt, University of Illinois,
Iowa City, Iowa
- 4B4 ADVANCED FUEL CONFINEMENT EXPERIMENTS USING SURFACE MAGNETIC FIELDS AND
PURE ION PLASMAS
A. Y. Wong, R. W. Schumacher, M. Fukao, J. Ferron, and G. Dimonte,
University of California, Los Angeles, California
- 4B5 ELECTRODYNAMIC METHOD OF PELLET HANDLING
S. Masuda and M. Washizu, University of Tokyo, Tokyo, Japan

Tuesday, May 19, 1981
2:00 PM, Room 3

Oral Session 4C -- INTENSE ELECTRON AND ION BEAMS III
Session Chairman - G. Cooperstein

- 4C1-2 INVITED PAPER: BEAM TARGET INTERACTIONS IN PARTICLE BEAM ICF
T. A. Mehlhorn, Sandia National Laboratory, Albuquerque, New Mexico
- 4C3 DETERMINATION OF THE STOPPING OF INTENSE DEUTERON BEAMS IN A PLASMA
F. C. Young, S. A. Goldstein, S. J. Stephanakis, and D. Mosher, Naval
Research Laboratory, Washington, DC
- 4C4 THE INFLUENCE OF DIFFERENT ION BEAM ENERGY DEPOSITION MODELS ON THE
HYDRODYNAMIC MOTION OF PLANAR ONE DIMENSIONAL AIR TARGETS
E. L. Kane, Science Applications, Incorporated, McLean, Virginia; J.
E. Rogerson, Naval Research Laboratory, Washington, DC
- 4C5 MODULAR SYSTEM REQUIREMENTS FOR LIGHT-ION INERTIAL-CONFINEMENT FUSION
D. Mosher, Naval Research Laboratory, Washington, DC; P. F. Ottinger
JAYCOR, Incorporated, McLean, Virginia
- 4C6 INTENSE LIGHT ION BEAM PRODUCTION AND TARGET IRRADIATION
S. Miyamoto, T. Ozaki, I. Chihara, K. Imasaki, S. Higaki, S. Nakai,
and C. Yamanaka, ILE, Osaka University, Japan
- 4C7 GENERATION OF A STABLE THERMONUCLEAR SUPERPINCH BY INTENSE ION BEAMS
F. Winterberg, DRI, Reno, Nevada
- 4C8 AN EXTRACTING SYSTEM OF ION STREAM FROM GAS DISCHARGE PLASMA
I. W. Rangelow, ITE, Poland
- 4C9 EXPERIMENTAL RESULTS ON THE INJECTOR FOR THE PULSELAC C ACCELERATOR
T. R. Lockner and S. Humphries, Jr., Sandia National Laboratory,
Albuquerque, New Mexico
- 4C10 HIGH INTENSITY, LOW VOLTAGE ION BEAM DIAGNOSTICS
E. E. Bowles, A. T. Forrester and D. M. Goebel, University of
California at Los Angeles, Los Angeles, California
- 4C11 COLD BEAM PRODUCTION FOR THE AUTO-RESONANT COLLECTIVE ION ACCELERATOR
H. A. Davis, M. L. Sloan, E. P. Cornet, T. P. Starke, and J. R.
Uglum, Austin Research Association, Austin, Texas

Tuesday, May 19, 1981
2:00 PM, Room 4

Oral Session 4D -- ATOMIC PHYSICS OF DENSE PLASMAS
Session Chairman - R. More

- 4D1 IONIZATION OF DENSE PLASMAS
R. M. More, Lawrence Livermore National Laboratory, Livermore,
California
- 4D2 TRANSPORT COEFFICIENTS FOR LASER FUSION PLASMA
Y. T. Lee and R. M. More, Lawrence Livermore National Laboratory,
Livermore, California
- 4D3 ELECTRICAL RESISTIVITIES OF DENSE PLASMAS
G. A. Rinker and B. I. Bennett, Los Alamos National Laboratory, Los
Alamos, New Mexico
- 4D4 EQUATION OF STATE OF DENSE, PARTIALLY DEGENERATE REACTING PLASMAS
F. J. Rogers, Lawrence Livermore National Laboratory, Livermore,
California
- 4D5 DEBYE SCREENING WITH FINITE SIZE IONS
H. E. DeWitt, Lawrence Livermore National Laboratory, Livermore,
California
- 4D6 DYNAMIC SCREENING EFFECTS ON ELECTRICAL CONDUCTIVITY IN Ar AND Xe
PLASMAS
D. B. Boercker, F. J. Rogers, and H. E. DeWitt, Lawrence Livermore
National Laboratory, Livermore, California

Tuesday, May 19, 1981
2:00 PM, Room 5

Oral Session 4E -- ARC TECHNOLOGY AND GASEOUS ELECTRONICS I
Session Chairman - R. R. Kinsinger

- 4E1-2 INVITED PAPER: SMALL-SCALE ANODE ACTIVITY IN VACUUM ARCS
L. P. Harris, General Electric R&D Center, Schenectady, New York
- 4E3 MAGNITUDE OF MAGNETIC FIELDS REQUIRED TO PREVENT ANODE SPOTS IN VACUUM
ARCS
J. V. R. Heberlein, J. G. Gorman, and D. Bhasavanich, Westinghouse
R&D Center, Pittsburgh, Pennsylvania
- 4E4 CATHODE SPOT PHENOMENA IN THE TRANSITION FROM VACUUM TO ATMOSPHERIC
PRESSURE ARCS
D. R. Porto, C. W. Kimblin, Westinghouse R&D Center, Pittsburgh,
Pennsylvania; D. T. Tuma, Carnegie-Mellon University, Pittsburgh,
Pennsylvania
- 4E5 HIGH CURRENT ROTATING ARC IN SF₆
A. Lee and J. E. Heinrich, Westinghouse R&D Center, Pittsburgh,
Pennsylvania
- 4E6 ARC THEORY SPECIALIZED FOR THE AIR BLAST CURRENT INTERRUPTER (PART I)
H. F. Vogel, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4E7 ARC THEORY SPECIALIZED FOR THE AIR BLAST CURRENT INTERRUPTER (PART II)
H. F. Vogel, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4E8 SOME ASPECTS OF AERODYNAMIC STABILIZATION OF GASEOUS DISCHARGES
O. Biblarz, Naval Postgraduate School, Monterey, California
- 4E9 INTERRUPTION OF DC CURRENT BY UTILIZATING AN ARC-CIRCUIT INSTABILITY
J. E. Heidrich and A. Lee, Westinghouse R&D Center, Pittsburgh,
Pennsylvania

Tuesday, May 19, 1981
2:00 PM, Room 6

Oral Session 4F -- THERMIONICS AND PLASMA DIODES I
Session Chairman - T. Mahefky

- 4F1-2 INVITED PAPER: THE IMPACT OF HIGH EFFICIENCY ENERGY 2 CONVERSION ON
FUSION SYSTEM
A. Hertzberg, University of Washington, Seattle, Washington
- 4F3-4 INVITED PAPER: FUTURE MILITARY APPLICATIONS FOR ADVANCED SPACE POWER
SUBSYSTEM TECHNOLOGY
T. Mahefky, Air Force Wright Aeronautical Laboratories, Wright-
Patterson AFB, Ohio
- 4F5-6 INVITED PAPER: GOALS OF THERMIONIC PROGRAM FOR SPACE POWER
R. E. English, NASA Lewis Research Center, Cleveland, Ohio
- 4F7 A PROGRAM-MANAGEMENT PLAN WITH CRITICAL-PATH DEFINITION FOR COMBUSTION
AUGMENTATION WITH THERMIONIC ENERGY CONVERSION (TEC)
J. F. Morris, NASA Lewis Research Center, Cleveland, Ohio; O. S.
Merrill, U. S. Department of Energy, Washington, DC; H. K. Reddy,
Aerospace Corporation, Los Angeles, California
- 4F8 THERMIONIC CONVERTERS FOR INCREASED PERFORMANCE IN GAS TURBINE POWER
PLANTS
E. J. Britt, G. O. Fitzpatrick, and R. S. Dick, Rasor Associates,
Incorporated, Sunnyvale, California
- 4F9 TAM COMBUSTOR TOPPING OF GAS TURBINE POWER PLANTS
G. Miskolczy, C. C. Wang, and D. P. Lieb, Thermo Electron
Corporation; B. J. Lovell, Brown-Boveri Turbomachinery, West Germany
- 4F10 DESIGN STUDY OF A COAL-FIRED THERMIONIC (THX) TOPPED POWER PLANT
R. S. Dick, E. J. Britt, and G. O. Fitzpatrick, Rasor Associates,
Incorporated, Sunnyvale, California

Tuesday, May 19, 1981
2:00 PM, Sweeney Center Auditorium

Poster Session 4P -- COMPUTER METHODS, COMPUTER CONTROL AND DATA ACQUISITION

- 4P1 OBTAINING FULL OPERATION FROM A LARGE SUITE OF NEUTRAL BEAM INJECTORS
T. L. Moore, R. J. Kane, and D. A. Meyer, Lawrence Livermore National
Laboratory, Livermore, California
- 4P2 THE FMIT PROTOTYPE CONTROL SYSTEM
R. Suyama, Westinghouse-Hanford, Hanford, Washington; J. Johnson and
D. Machen, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4P3 AUTOMATIC GENERATION OF C-CODE FOR THE ANTARES CONTROL SYSTEM
R. Wright, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4P4 LOAD FREQUENCY CONTROL OF A COAL-FIRED MHD/STEAM POWER PLANT
R. D. Joseph, University of Tennessee Space Institute, Tennessee; N.
Tyle, Carnegie-Mellon University, Pittsburgh, Pennsylvania
- 4P5 HIGH DENSITY, WIDE BANDWIDTH, ANALOG DATA ACQUISITION SYSTEM FOR X-RAY
IMAGING OF PLASMA DISCHARGES ON TFTR
G. L. Zigler, J. W. Watson, C. W. Mayo, N. R. Sauthoff, and K. W.
Hill, Princeton University, Princeton, New Jersey

- 4P6 A DIGITAL OSCILLOSCOPE CAMERA FOR TIME-RESOLVED PLASMA DIAGNOSTICS
S. E. Caldwell and R. C. Smith, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4P7 FIVE MHZ PHA FOR FUSION DIAGNOSTICS
H. P. Spracklen, Lawrence Livermore National Laboratory, Livermore, California
- 4P8 ON STABILITY OF PLASMA IN TOROIDAL SYSTEMS OF NON-ROUND CROSS-SECTIONS
S. W. Temko, K. W. Temko, and S. K. Kuzmin, Moscow Geological Prospecting Institute, Moscow, USSR
- Tuesday, May 19, 1981
2:00 PM, Sweeney Center Auditorium
- Poster Session 4Q -- INTENSE ELECTRON AND ION BEAMS II
- 4Q1 Vz-SHEAR EFFECTS ON THE DIOTRON INSTABILITY
M. A. Mostrom and M. E. Jones, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4Q2 INTERPLAY BETWEEN TWO-STREAM AND FILAMENTATION INSTABILITIES IN THE PHEREMEX PROPAGATION EXPERIMENTS
H. Lee and L. E. Thode, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4Q3 THE PIERCE INSTABILITY IN NEUTRALIZED ICF BEAMS
D. S. Lemons, J. R. Cary, C. M. Snell, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4Q4 PLASMA CHANNELS FOR TRANSPORT OF INTENSE ION BEAMS
F. L. Sandel, JAYCOR, Incorporated, McLean, Virginia
- 4Q5 CONVECTIVE MIXING IN MULTIPLY PULSED CHANNELS
M. Raleigh, R. E. Pechacek, J. R. Greig, K. A. Gerber, J. P. Boris, and J. M. Picone, Naval Research Laboratory, Washington, DC
- 4Q6 THEORETICAL STUDIES OF THE GRAD-B MODEL FOR RELATIVISTIC ELECTRON BEAMS
R. C. Backstrom, J. A. Halbleib, J. R. Lee, and T. P. Wright, Sandia National Laboratory, Albuquerque, New Mexico
- 4Q7 THEORY OF THE FILAMENTATION INSTABILITY WITH FINITE RADIUS, PRESSURE AND BETATRON OSCILLATION EFFECTS
J. G. Siambis, Science Applications, Incorporated, McLean, Virginia; B. G. Epstein, Sandia National Laboratory, Albuquerque, New Mexico
- 4Q8 SPATIAL ORIGIN OF NEUTRALIZING IONS FOR ELECTRON BEAM IN DIELECTRIC GUIDES
W. Halverson, Spire Corporation, Bedford, Massachusetts
- 4Q9 FOCUSING OF AN INTENSE SPACE-CHARGE-NEUTRAL ION BEAM BY A WEAK MAGNETIC FIELD
S. Robertson, University of California, Irvine, California
- 4Q10 PROPAGATION PHENOMENA OF A 3-ns RELATIVISTIC ELECTRON BEAM
M. A. Greenspan and J. C. Leader, McDonnell-Douglas Research Laboratory, St. Louis, Missouri
- Tuesday, May 19, 1981
2:00 PM, Sweeney Center Auditorium
- Poster Session 4R - FUSION REACTOR TECHNOLOGY
- 4R1 EFFECT OF PLASMA DISRUPTION ON FIRST WALL HEAT TRANSFER
J. A. Fillo and H. Makowitz, Brookhaven National Laboratory, Brookhaven, New York
- 4R2 TOROIDAL FIELD RIPPLE CONDUCTION LOSSES IN THE FED TOKAMAK
S. E. Attenberger, J. A. Holmes, W. A. Houlberg, and S. A. Scott, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 4R3 HEATING POWER CONTOURS FOR THE FED TOKAMAK
S. E. Attenberger and W. A. Houlberg, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 4R4 LARGE AREA PUMP LIMITER FOR FED
A. K. Prinja, R. W. Conn, and S. P. Grotz, University of California at Los Angeles, California
- 4R5 A TECHNOLOGICAL AND ECONOMIC EVALUATION FOR A COMMERCIAL FUSION REACTOR BASED ON LASER PELLETT METHODOLOGY (INERTIAL CONFINEMENT)
S. M. Ayub, Karachi, Pakistan
- Wednesday, May 20, 1981
9:00 AM, Room 1
- Oral Session 5A -- PLASMA DIAGNOSTICS III
Session Chairman - E. A. McLean
- 5A1-2 INVITED PAPER: CONCEPTS AND ILLUSTRATIONS OF OPTICAL PROBING DIAGNOSTICS FOR LASER-PRODUCED PLASMAS
J. A. Stamper, E. A. McLean, S. P. Obenshain, and B. H. Ripin, Naval Research Laboratory, Washington, DC
- 5A3 X-RAY BACKLIGHT OF AN EXPLODING RAILGUN PLASMA
L. P. Bradley, A. C. Mitchell, W. Graham, and E. L. Orham, Lawrence Livermore National Laboratory, Livermore, California
- 5A4 STREAK CAMERA RECORDING OF SIMULTANEOUS OPTICAL AND X-RAY SIGNALS
R. A. Lerche, H. Medeckl, G. E. Phillips and S. W. Thomas, Lawrence Livermore National Laboratory, Livermore, California
- 5A5 NEUTRON STREAK CAMERA
C. L. Wang, R. Kalibjian and M. J. Singh, Lawrence Livermore National Laboratory, Livermore, California
- 5A6 MEASUREMENT OF PLASMA SPACE POTENTIAL IN A BASEBALL FIELD WITH A HEAVY NEUTRAL BEAM PROBE
J. O. Kolawole, K. Pourrezaei, J. F. Schatz, K. A. Connor and J. T. Woo, Rensselaer Polytechnic Institute, Troy, New York
- 5A7 THE APPLICATION OF PARTICLE BEAM PROBES IN THREE DIMENSIONAL MAGNETIC FIELDS
K. Pourrezaei, J. O. Kolawole, K. A. Connor, and J. T. Woo, Rensselaer Polytechnic Institute, Troy, New York
- 5A8 POWER FLUX MEASUREMENTS WITH PYROELECTRIC DETECTORS ON THE RENSSELAER TOKAMAK
T. R. Price and K. A. Connor, Rensselaer Polytechnic Institute, Troy, New York
- 5A9 DEVELOPMENT OF A NEUTRAL XENON BEAM FOR PLASMA DIAGNOSTICS
A. I. Hershovitch, J. G. Alessi, and J. W. Davenport, Brookhaven National Laboratory, New York; R. L. Hickok, Jr., Rensselaer Polytechnic Institute, Troy, New York
- Wednesday, May 19, 1981
9:00 AM, Room 2
- Oral Session 5B -- COMPUTER METHODS, COMPUTER CONTROL AND DATA ACQUISITION
Session Chairman - C. Barnes
- 5B1 A CONSERVATIVE VARIATIONAL PARTICLE TRANSPORT METHOD
C. E. Lee, M. P. Dias and C. P. Fan, Texas A&M University, College Station, Texas
- 5B2 ENERGETIC CHARGED PARTICLES SLOWING-DOWN
D. Besnard, Centre d'Etudes de Limeil, France
- 5B3 ENERGY DEPOSITION MODEL FOR THE DESIGN OF REB-DRIVEN, LARGE-VOLUME GAS LASERS
J. A. Halbleib, R. Hamil, and E. L. Patterson, Sandia National Laboratory, Albuquerque, New Mexico
- 5B4 ORBIT-AVERAGED AND IMPLICIT PARTICLE CODES
B. I. Cohen, R. P. Freis, and J. A. Byers, Lawrence Livermore National Laboratory, Livermore, California; V. A. Thomas, University of California, Berkeley, California
- 5B5 THE LARGE STANFORD 3D, EM PARTICLE SIMULATION CODE: DATA MANAGEMENT AND PRELIMINARY RESULTS
O. Buneman and S. Motzny, Stanford University, Stanford, California
- 5B6 ESTIMATION OF SPECTRA FROM MULTIFLEX DATA
H. P. Hong, R. H. Day, and S. W. White, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5B7 INFORMATION PROCESSING IN PLASMA PHYSICS AND TECHNIQS
H. G. Thom, University of Karlsruhe, Karlsruhe, Germany
- Wednesday, May 20, 1981
9:00 AM, Room 3
- Oral Session 5C -- PLASMA FOCUS II
Session Chairman - B. L. Freeman
- 5C1 SOME APPLICATIONS OF IRREVERSIBLE THERMODYNAMICS PRINCIPLES TO THE STUDY OF DISSIPATIVE PLASMAS
A. Schifano and C. F. Fontan, University of Buenos Aires and Defense Ministry of Argentina
- 5C2-3 INVITED PAPER: NONRELATIVISTIC ELECTRON BEAM DIAGNOSTICS IN THE PLASMA FOCUS
R. Rodriguez-Trelles and A. Banuelos, University of Buenos Aires, Argentina
- 5C4 HIGH ENERGY PROTONS AND DEUTERONS IN A DENSE PLASMA FOCUS
Y. Kitagawa, Y. Yamada, H. Saibara, M. Yokoyama, and C. Yamanaka, Osaka University, Osaka, Japan
- 5C5 MACROSCOPIC PLASMA BEHAVIOUR AND NEUTRON EMISSION IN A PLASMA FOCUS
K. Hirano, Y. Knodoh, K. Shimoda, and T. Yamamoto, Gunma University, Gunma, Japan
- 5C6 INVESTIGATION OF EFFECTS CONNECTED WITH APPLICATION OF AXIAL MAGNETIC FIELD ON PLASMA COLUMN INSTABILITY IN PLASMA FOCUS TYPE DISCHARGE
S. Czekał, S. Denus, A. Kasperczuk, M. Paduch, L. Pokora, S. Szedzinski, A. Szydłowski, J. Wołski, and J. Wołowski, Kaliski Institute of Plasma Physics and Laser Microfusion, San Warsaw, Poland
- 5C7 FOCUSING OF ELECTRON-BEAM FILAMENTS
V. Nardi, W. H. Bostick, J. Feugeas, and W. Prior, Stevens Institute of Technology, Hoboken, New Jersey

- 5C8 IMAGING OF THE ION BEAM SOURCE IN THE PLASMA FOCUS
W. Prior, V. Nardi, and W. H. Bostick, Stevens Institute of Technology, Hoboken, New Jersey
- 5C9 ACCELERATION OF CHARGED PARTICLE IN PLASMA FOCUS
M. J. Rhee, University of Maryland, College Park, Maryland
- 5C10 CHARACTERISTICS OF ELECTRON BEAMS GENERATED BY A DENSE PLASMA FOCUS
W. Stygar, G. Gerdin, F. Venneri, J. Durham, and J. Mandrekas, University of Illinois, Urbana, Illinois
- Wednesday, May 20, 1981
9:00 AM, Room 4
- Oral Session 5D -- HIGH POWER MICROWAVE GENERATION II
Session Chairman - A. T. Drobot
- 5D1-2 INVITED PAPER: RELATIVISTIC MAGNETRON
A. Patevsky and G. Bekefi, Massachusetts Institute of Technology, Cambridge, Massachusetts; A. T. Drobot, Science Applications, Incorporated, McLean, Virginia
- 5D3 RELATIVISTIC PERIPHERAL, AXIAL AND HELICAL BRILLOUIN FLOW
O. Buneman, Stanford University, Stanford, California
- 5D4 A RELATIVISTIC MAGNETRON WITH AN OXIDE CATHODE
W. P. Ballard, et al, Stanford University, Stanford, California
- 5D5 A LONG PULSE HYBRID INVERTED COAXIAL MAGNETRON FOR AIR BREAKDOWN STUDIES
W. M. Black, et al, Naval Research Laboratory, Washington, DC
- 5D6 SELF-CONSISTENT CALCULATION OF GYROTRON SINGLE-CAVITY OSCILLATORS AND PRELIMINARY RESULTS
P. Charbit and G. Mourier, Thomson-CFS/DTE, France
- 5D7 TEST RESULTS OF A GYROTRON OPERATING IN A HIGH ORDER MODE
B. Arfin and M. E. Read, Naval Research Laboratory, Washington, DC
- 5D8 A 240 GHz GYROMONOTRON
J. D. Silverstein, Harry Diamond Laboratories, Adelphi, Maryland; M. E. Read, Naval Research Laboratory, Washington, DC
- 5D9 THE QUASI-OPTICAL ELECTRON CYCLOTRON MASER
J. L. Vomvoridis, et al, Naval Research Laboratory, Washington, DC
- 5D10 MIXED SLOW WAVE OPERATION OF A WIDE-BAND DIELECTRIC GYROTRON
J. Choe and H. Uhm, Naval Surface Weapons Center, White Oak, Maryland; S. Ahn, Naval Research Laboratory, Washington, DC
- Wednesday, May 20, 1981
9:00 AM, Room 5
- Oral Session 5E -- ARC TECHNOLOGY AND GASEOUS ELECTRONICS II
Session Chairman - K. J. Nygaard
- 5E1-2 INVITED PAPER: TURBULENCE EFFECTS IN ARC PLASMAS
D. M. Benenson, SUNY-Buffalo, Buffalo, New York
- 5E3 EXCITATION PROCESSES IN HgBr LASER PLASMAS
K. J. Nygaard, H. L. Brooks, E. Weigold and L. Frost, University of Missouri-Rolla, Rolla, Missouri
- 5E4 THE EXPERIMENTAL PRODUCTION OF MICROWAVE PLASMA FILAMENTS AND DISCHARGES AT HIGH PRESSURES
J. Rogers and J. Asmussen, Jr., Michigan State University, Ann Arbor, Michigan
- 5E5 PREDICTED EFFECTS OF CHARGED PARTICLE DIFFUSION ON ELECTRODE SHEATH PROPERTIES OF DISCHARGES IN ATTACHING GAS MIXTURES
R. R. Mitchell, L. E. Klein and L. J. Denes, Westinghouse R&D Center, Pittsburgh, Pennsylvania
- 5E6 MASS IDENTIFIED IONS FROM SPARK DISCHARGE OF SF6 IN THE PRESSURE RANGE 5-67 kPa
I. Sauers, L. C. Frees, H. W. Ellis and L. G. Christophorou, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 5E7 A SIMPLE MODEL FOR THE STEPPED LEADER DISCHARGE PHENOMENON
P. Savic, M. M. Kekez, and G. P. Lougheed, National Research Council, Canada
- Wednesday, May 20, 1981
9:00 AM, Room 6
- Oral Session 5F -- THERMIONIC AND PLASMA DIODES II
Session Chairman - O. S. Merrill
- 5F1 HIGH TEMPERATURE COGENERATION COMBUSTOR DESIGN
E. J. Britt, R. S. Dick, G. O. Fitzpatrick, and D. C. Johnson, Rasor Associates, Incorporated, Sunnyvale, California
- 5F2 THERMIONIC POWER GENERATION AT RASOR ASSOCIATES
G. O. Fitzpatrick and E. J. Britt, Rasor Associates, Incorporated, Sunnyvale, California
- 5F3 THERMIONIC ENERGY CONVERSION (TEC) TOPPING THERMOELECTRICS
J. F. Morris, NASA Lewis Research Center, Cleveland, Ohio
- 5F4 DEVELOPMENT OF CONVERTERS FOR A THERMIONIC ARRAY MODULE
F. N. Huffman, Thermo Electron Corporation
- 5F5 THE DESIGN OF SERIES-PARALLEL CONNECTED THERMIONIC CONVERTER ARRAYS
J. B. McVey, E. J. Britt, G. O. Fitzpatrick, and R. S. Dick, Rasor Associates, Incorporated, Sunnyvale, California
- 5F6 PERFORMANCE AND LIFE TESTS OF COMBUSTION HEATED THERMIONIC CONVERTERS
D. B. Goodale, P. Reagan, G. Miskolczo, D. Lieb, and F. N. Huffman, Thermo Electron Corporation
- 5F7 LASER ACTIVATED THERMIONIC SWITCH
C. Lee and P. E. Oettinger, Thermo Electron Corporation
- 5F8 ELECTRICAL POWER EXTRACTION FROM SUPERSONIC PLASMA FLOW
J. Kwan, J. Pearson, and B. Ahlborn, University of British Columbia, Vancouver, Canada
- 5F9 COMPUTER ANALYSES OF THERMIONIC CONVERTER PHENOMENA
J. B. McVey and E. J. Britt, Rasor Associates, Incorporated, Sunnyvale, California
- 5F10 THE PLASMA-SHEATH BOUNDARY CONDITION REVISITED
S. H. Lam and G. Main, Princeton University, Princeton, New Jersey,
- Wednesday, May 20, 1981
9:00 AM, Sweeney Center Auditorium
- Poster Session 5P -- COMPACT TOROIDS, FIELD-REVERSED RINGS
- 5P1 KINETIC EFFECTS ON THE TILTING MODE IN FRX
C. E. Seyler, D. C. Barnes, and J. L. Schwarzmeier, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5P2 COMPACT TOROID GENERATION OF THE SPHEROMAK TYPE IN THE CTX FACILITY
I. Henins, H. W. Hoida, T. R. Jarboe, R. K. Linford, J. Marshall, K. F. McKenna, D. A. Platts, A. R. Sherwood, M. Tuszewski, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5P3 IMPURITY AND GENERATION STUDIES OF COMPACT TOROIDS OF THE SPHEROMAK TYPE IN THE PROTOTYPE FACILITY
H. W. Hoida, I. Henins, T. R. Jarboe, J. Lipson, J. Marshall, Aand A. R. Sherwood, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5P4 DENSITY AND VACUUM CONTROL OF A PLASMA GUN COMPACT TORUS EXPERIMENT
W. C. Turner, G. C. Goldenbaum, E. H. A. Granneman, C. W. Hartman, D. S. Prono, and A. C. Smith, Jr., Lawrence Livermore National Laboratory, Livermore, California
- 5P5 ENERGETICS OF THE PLASMA DECAY IN BETA II
G. C. Goldenbaum, E. H. A. Granneman, C. W. Hartman, D. S. Prono, A. C. Smith, Jr., J. Taska, and W. C. Turner, Lawrence Livermore National Laboratory, Livermore, California
- 5P6 STUDIES OF FORCED RECONNECTION AND PLASMA PROPERTIES OF A PLASMA-GUN-PRODUCED COMPACT TOROID
D. S. Prono, G. Goldenbaum, E. Granneman, J. H. Hammer, C. W. Hartman, A. C. Smith, Jr., J. Taska, and W. C. Turner, Lawrence Livermore National Laboratory, Livermore, California
- 5P7 IONIZATION METHOD FOR THETA-PINCH FORMATION OF FIELD-REVERSED CONFIGURATIONS
R. J. Comisso, C. A. Ekdahl, and E. G. Sherwood, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5P8 THE MOVING-RING FIELD-REVERSED MIRROR PROTOTYPE REACTOR
A. C. Smith, Jr., and C. P. Ashworth, Pacific Gas and Electric Company, San Francisco, California; G. A. Carlson and W. S. Neef, Lawrence Livermore National Laboratory, Livermore, California; H. H. Fleischmann, Cornell University, Ithaca, New York; T. Kamnash, University of Michigan, Ann Arbor, Michigan; W. Grossman, Courant Institute, New York University, New York; K. R. Shultz C. P. C. Wong, General Atomic Company, San Diego, California; and D. M. Woodall, University of New Mexico, Albuquerque, New Mexico
- 5P9 FRC EXPERIMENTS ON TRX-1
W. C. Armstrong, A. L. Hoffman, and D. G. Harding, Mathematical Sciences Northwest, Incorporated, Seattle, Washington
- 5P10 THE MS-1 SPHEROMAK
G. Goldenbaum, A. DeSilva and A. Bondeson, University of Maryland, College Park, Maryland
- 5P11 RESISTIVE PLASMA CURRENT DRAG ON FIELD-REVERSED E-LAYER TRANSLATION
D. J. Rej, M. R. Parker, R. Jayakumar, and H. H. Fleischmann, Cornell University, Ithaca, New York
- 5P12 PLASMA CONFINEMENT AND HEATING IN RECE-CHRISTA
D. Taggart, M. Parker, R. Jayakumar, D. Rej and H. H. Fleischmann, Cornell University, Ithaca, New York
- 5P13 ELECTRON CURRENTS IN FIELD REVERSED MIRROR START-UP
R. A. Stark, G. H. Miley, and T. Hailii, University of Illinois, Urbana, Illinois
- 5P14 CONFINEMENT MODEL FOR A FIELD-REVERSED CONFIGURATION
L. C. Steinhauer, Mathematical Sciences Northwest, Incorporated, Seattle, Washington

- 5P15 TWO-DIMENSIONAL MHD SIMULATIONS OF MAGNETIC FIELD LINE RECONNECTION
R. D. Milroy and J.U. Brackbill, Mathematical Sciences Northwest, Incorporated, Seattle, Washington
- 5P16 TOROIDAL PLASMA DEVICE FEATURING PERMANENT MAGNET CUSP CONFINEMENT AND OHMIC HEATING
M. Rhodes, N. C. Luhmann, Jr., and J. M. Dawson, University of California at Los Angeles, Los Angeles, California,
- 5P17 OBSERVATIONS OF SEPARATRIX MOTION DURING THE FORMATION OF FIELD-REVERSED CONFIGURATION
J. C. Cochrane, W. T. Armstrong, J. Lipson, M. Tuszewski, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5P18 MHD MODEL PREDICTS VIABLE AXISYMMETRIC INSTRUMENTATION SLOT FOR FLUX CONSERVER IN CTX
C. G. Lilliequist and R. L. Spencer, Los Alamos National Laboratory, Los Alamos, New Mexico
- Wednesday, May 20, 1981
9:00 AM, Sweeney Center Auditorium
Poster Session 5Q -- PLASMA FUSION RESEARCH
- 5Q1 LOW FREQUENCY FLUCTUATION MEASUREMENTS IN THE CENTRAL CELL OF TMX
G. A. Hallock, R. L. Hickok, and W. C. Jennings, Rensselaer Polytechnic Institute, Troy, New York; E. B. Hooper, Jr., Lawrence Livermore National Laboratory, Livermore, California; E. J. Powers, Y. C. Kim, and J. Y. Hong, University of Texas at Austin, Austin, Texas
- 5Q2 PLASMA ANALYSIS FOR D-D TANDEM MIRROR REACTORS
R. W. Conn, F. Kantrowitz, N. S. Kim, and G. W. Shuy, University of California, Los Angeles, California
- 5Q3 THE INTERCHANGEABLE MODULE STELLARATOR
D. T. Anderson, J. A. Derr, and J. L. Shohet, Torsatron-Stellarator Laboratory, University of Wisconsin, Madison, Wisconsin
- 5Q4 LOW-FREQUENCY COHERENT FLUCTUATIONS IN THE PROTO-CLEO TORSATRON
J. H. Harris, J. N. Talmadge, T. D. Mantei, and J. L. Shohet, Torsatron-Stellarator Laboratory, University of Wisconsin, Madison, Wisconsin
- 5Q5 DRIFT OPTIMIZATION IN IMS
R. A. Schill, D. T. Anderson, and J. L. Shohet, Torsatron-Stellarator Laboratory, University of Wisconsin, Madison, Wisconsin
- 5Q6 CHARACTERISTICS OF LOW FREQUENCY MHD OSCILLATIONS IN THE PRETEXT TOKAMAK
Y. C. Kim, T. P. Kochanski, L. Khadra, R. F. Gandy, E. J. Powers, and R. D. Bengtson, University of Texas at Austin, Austin, Texas
- 5Q7 FIRST RESULTS FROM THE OHTE EXPERIMENT
R. R. Goforth, G. L. Jackson, R. J. LaHaye, M. J. Schaffer, and T. Ohkawa, General Atomic Company, San Diego, California
- 5Q8 OBSERVATION OF HIGH DENSITY EDGE LAYER IN DOUBLET III
D. R. Baker, M. Nagami, and R. T. Snider, General Atomic Company, San Diego, California
- 5Q9 LOW VOLTAGE STARTUP WITH RF ASSIST AND OTHER PREIONIZATION EXPERIMENTS ON ISX-B AT THE ELECTRON CYCLOTRON FREQUENCY
A. G. Kulchar, O. C. Eldridge, Jr., A. C. England, C. M. Loring, Jr., P. H. Edmonds, M. Murakami, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 5Q10 MULTICHANNEL RADIALLY RESOLVED MEASUREMENTS OF BREMSSTRAHLUNG ENHANCEMENTS IN THE VISIBLE ON THE ALCATOR C. TOKAMAK
M. Foord, E. S. Marmor, J. L. Terry, and S. M. Wolfe, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 5Q11 IMPURITY X-RAY EMISSION FROM THE ALCATOR TOKAMAKS
J. E. Rice, E. S. Marmor, and L. M. Stoloff, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 5Q12 TEMPORAL AND SPATIAL VARIATION OF LINE RADIATION FROM ZT-40
R. B. Howell, R. G. Watt, and P. G. Weber, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5Q13 INTERFEROMETRIC MEASUREMENTS OF PLASMA DENSITY IN ZT-40 WITH INCONEL LINER, USING AN EIGHT-CORD CO₂ INTERFEROMETER
A. R. Jacobson, L. J. Jolin, and K. A. Klare, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5Q14 INTERFEROMETRIC MEASUREMENTS OF PLASMA DENSITY FLUCTUATIONS DURING THE FORMATION PHASE IN THE ZT-40 REVERSED-FIELD PINCH WITH CERAMIC LINER
A. R. Jacobson, Los Alamos National Laboratory, Los Alamos, New Mexico
- Wednesday, May 20, 1981
2:00 PM, Room 1
Oral Session 6A -- PLASMA DIAGNOSTICS II
Session Chairman - John Stamper
- 6A1-2 INVITED PAPER: NANOSECOND-GATING PROPERTIES OF PROXIMITY-FOCUSED MICROCHANNEL-PLATE IMAGE INTENSIFIERS
- N. S. P. King, G. J. Yates, and S. A. Jaramillo, Los Alamos National Laboratory, Los Alamos, New Mexico; J. W. Ogle, and J. L. Detch, Jr., E.G.G., Incorporated, Santa Barbara, California
- 6A3 PLASMA SPECTROSCOPY IN PRESENCE OF FAST CHARGED PARTICLES
R. Jayakumar and H. H. Fleischmann, Cornell University, Ithaca, New York
- 6A4 A DESIGN FOR AN ION SPECIES SEPARATION DEVICE WHICH PRESERVES TIME-OF-FLIGHT INFORMATION
C. K. Manka, Sam Houston University, Houston, Texas
- 6A5 MHD PLASMA TEMPERATURE MEASUREMENT BY SODIUM WING REVERSAL TECHNIQUE
L. Bauman, R. Dauback, and S. Jeglinski, Mississippi State University, Biloxi, Mississippi; R. Carrington, and M. Miller, Mountain States Energy, Laramie, Wyoming
- 6A6 SPECTROSCOPIC TEMPERATURE MEASUREMENTS IN A COAL-FIRED MHD COMBUSTOR
W. E. Baucum and B. Winkelman, University of Tennessee Space Institute, Tullahoma, Tennessee
- 6A7 POTASSIUM LINE SHAPE STUDIES: OPTICAL DIAGNOSTICS FOR MHD PLASMAS
J. P. Hohimer, D. P. Aeschliman, Sandia National Laboratory, Albuquerque, New Mexico
- 6A8 APERTURED PLASMA PROBE FOR HIGH DENSITY PLASMA
J. A. Webb and G. W. McClure, Sandia National Laboratory, Albuquerque, New Mexico
- Wednesday, May 20, 1981
2:00 PM, Room 2
Oral Session 6B -- NUCLEAR PUMPED LASERS
Session Chairman - M. A. Prelas
- 6B1 DIRECT NUCLEAR-PUMPED ³HeXe LASER AT 2.63 μm
N. W. Jalufka, NASA Langley Research Center, Hampton, Virginia
- 6B2 THE DUAL MEDIA APPROACH TO HIGH ENERGY NUCLEAR-PUMPED LASERS
F. P. Doody, Princeton Plasma Physics Laboratory, Princeton, New Jersey
- 6B3 LIFETIME, COLLISIONAL FORMATION AND QUENCHING PARAMETER MEASUREMENTS OF XeF*(B)
L. E. Zapata, J. D. Cox, and R. T. Schneider, University of Florida, Gainesville, Florida
- 6B4 DIRECT REACTOR PUMPED EXCIMER LASER SYSTEMS
S. Lim and E. R. Fisher, Wayne State University, Detroit, Michigan
- 6B5 STEADY-STATE NUCLEAR-PUMPING OF GAS MIXTURES
M. J. Lecours, A. Chung, and M. A. Prelas, UMC and University of Missouri Research Reactor, Columbia, Missouri
- 6B6-7 INVITED PAPER: NUCLEAR-PUMPED CO₂ LASER
M. J. Row, R. H. Liang, and R. T. Schneider, University of Florida, Gainesville, Florida
- 6B8 ANALYTICAL MODEL FOR NUCLEAR-PUMPED CO₂ FLUID MIXING LASER
J. J. Dearth, University of Alabama
- 6B9 A POTENTIAL NUCLEAR-PUMPED O₂(¹Δ) - I₂ LASER
M. S. Zediker, T. R. Dooling, and G. H. Miley, University of Illinois, Urbana, Illinois
- 6B10 A COMPARISON OF NUCLEAR PUMPING WITH ELECTRON BEAM AND ELECTRICAL SELF-SUSTAINED DISCHARGES IN O₂
T. R. Dooling, M. S. Zediker, and G. H. Miley, University of Illinois, Urbana, Illinois
- 6B11 MODELING OF NUCLEAR-PUMPED SYSTEMS
M. A. Prelas, S. K. Loyalka, and G. Jones, University of Missouri, Columbia, Missouri
- 6B12 NUCLEAR-PUMPED LASERS FOR SPACE APPLICATIONS
F. P. Boody, Princeton Plasma Physics Laboratory, Princeton, New Jersey
- Wednesday, May 20, 1981
2:00 PM, Room 6
Oral Session 6F -- THERMIONICS AND PLASMA DIODES III
Session Chairman - J. F. Morris
- 6F1 SURFACE PHYSICS RESEARCH APPLIED TO THE DEVELOPMENT OF IMPROVED THERMIONIC CONVERTERS
J. L. Desplat, Rasor Associates, Incorporated, Sunnyvale, California
- 6F2 INVESTIGATIONS INTO THE MECHANISM OF OPERATION OF THERMIONIC CONVERTERS WITH MOLYBDENUM OXIDE COLLECTORS
M. Saunders, L. R. Danielson, and F. N. Huffman, Thermo Electron Corporation
- 6F3 PROPERTIES OF A LOW WORK FUNCTION Zr-O-C-W(100) EMITTER
L. R. Danielson, Thermo Electron Corporation
- 6F4 LOW WORK FUNCTION ELECTRODE MATERIALS FOR THERMIONIC ENERGY CONVERSION
L. W. Swanson and P. R. Davis, Oregon Graduate Center, Beaverton, Oregon

- 6F5 THERMIONIC ELECTRODE EVALUATIONS
D. Jacobson, Arizona State University, Tempe, Arizona
- 6F6 APPLICATION OF MICROFABRICATION TECHNOLOGIES TO THERMIONIC ENERGY CONVERSION
I. Brodie, C. A. Spindt, and C. Shephard, SRI International, Menlo Park, California
- 6F7 SIGNIFICANCE OF NEGATIVE IONS FOR THERMIONICS CONVERTER PERFORMANCE
L. K. Hansen and N. S. Razor, Razor Associates, Incorporated, Sunnyvale, California
- 6F8 INVESTIGATION OF IONIZATION PROCESSES IN THE THERMIONIC ENERGY CONVERTER PLASMA
C. N. Manikopoulos and R. Radpour, Rutgers University, New Brunswick, New Jersey,
- 6F9 VACUUM ARC DISTRIBUTION DEUTERIUM ION SOURCE FOR ICF DIODE
G. W. McClure and J. A. Webb, Sandia National Laboratory, Albuquerque, New Mexico
- Wednesday, May 20, 1981
2:00 PM, Sweeney Center Auditorium
Poster Session 6P - PLASMA FOCUS III
- 6P1 NEUTRON MEASUREMENTS WITH A TRITIUM TARGET IN A PLASMA FOCUS DEVICE
N. Tsois, G. Ionescu, and N. B. Mandache, Institute of Physics, Bucharest, Romania
- 6P2 RADIAL DISTRIBUTION OF ELECTRON TEMPERATURE AND DENSITY IN THE COLLAPSE PHASE IN A LOW ENERGY PLASMA FOCUS DEVICE
T. Ionescu-Bujor, N. Tsois, and V. Zoita, Institute of Physics, Bucharest, Romania
- 6P3 IMPURITY STUDIES IN A PLASMA FOCUS
T. Ionescu-Bujor, A. Iordanescu, and V. Zoita, Institute of Physics, Bucharest, Romania
- 6P4 VISIBLE EMISSION OF HYPOCYCLOIDAL-PINCH PLASMAS
K. S. Han, D. D. Venable, and J. H. Lee, Hampton Institute, Hampton, Virginia
- 6P5 GAS PUFF Z-PINCHES WITH D₂ AND D₂/Ar MIXTURES
J. Bailey, J. Ettinger, A. Fisher, and N. Rostoker, University of California, Irvine, California
- 6P6 COMPUTATIONAL INTERPRETATION OF LASER-INITIATED Z-PINCH DIAGNOSTICS AN UPDATE
I. Lindemuth, J. Brownell, T. Oliphant, and D. Weiss, Los Alamos National Laboratory, Los Alamos, New Mexico
- Wednesday, May 20, 1981
2:00 PM, Sweeney Center Auditorium
Poster Session 6Q -- PLASMA HEATING
- 6Q1 RF STARTUP AND HEATING IN TOKAPOLE II
D. J. Holly, C. E. Kieras, S. C. Prager, D. A. Shepard, J. C. Sprott and F. D. Witherspoon, University of Wisconsin, Madison, Wisconsin
- 6Q2 RADIOFREQUENCY HEATING OF A THREE-METER, LOW DENSITY THETA PINCH
H. Meuth, S. O. Knox, F. L. Ribe, and E. Sevilano, University of Washington, Seattle, Washington
- 6Q3 LOWER HYBRID CURRENT DRIVE EXPERIMENTS ON VERSATOR II
S. C. Luckhardt, M. Porkolab, K. I. Chen and S. F. Knowlton, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 6Q4 LOWER HYBRID HEATING IN EBT
R. C. Goldfinger, Oak Ridge National Laboratory, Oak Ridge, Tennessee; A. H. Kritz, Hunter College/CUNY and Oak Ridge National Laboratory, Oak Ridge, Tennessee; and O. C. Eldridge, University of Tennessee, and Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 6Q5 A FINITE DIFFERENCE MODEL FOR ICRH WAVES IN AN EBT WITH PERIODIC AXIAL AND RADIAL GRADIENTS
P. L. Huddleston, R. J. Kashuba, and J. H. Mullen, McDonnell Douglas Corporation, St. Louis, Missouri
- 6Q6 HEATING EXPERIMENTS IN THE ION CYCLOTRON RANGE OF FREQUENCIES ON EBT-S
T. L. Owens, and J. H. Mullen, McDonnell Douglas Corporation, St. Louis, Missouri; F. W. Baity, Jr., Oak Ridge National Laboratory, Oak Ridge, Tennessee; and O. C. Eldridge, University of Tennessee, and Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 6Q7 ION CYCLOTRON HEATING IN THE PROTO-CLEO STELLARATOR
D. J. Hoffman, D. Wroblewski, T. D. Mantel and J. L. Shohet, Toratron-Stellarator Laboratory, University of Wisconsin, Madison, Wisconsin
- 6Q8 HIGH POWER HEATING EXPERIMENTS ON THE WISCONSIN LEVITATED OCTUPOLE
J. R. Conrad, R. N. Dexter, C. M. Fortgana, R. A. Moyer, L. S. Peranich, J. C. Sprott, E. J. Strait, R. P. Torti, and J. C. Twichell, University of Wisconsin, Madison, Wisconsin; and J. D. Barter, TRW, Redondo Beach, California
- 6Q9 GENERATION OF POLARIZED MODES IN CORRUGATED WAVEGUIDE FOR ELECTRON CYCLOTRON HEATING
J. L. Doane, Plasma Physics Laboratory, Princeton, New Jersey
- 6Q10 ELECTRON CYCLOTRON HEATING IN TANDEM MIRRORS
K. Audenaerde, J. Scharer, and J. Beyer, University of Wisconsin, Madison, Wisconsin
- 6Q11 ELECTRON CYCLOTRON RESONANCE HEATING IN A MIRROR FIELD
S. P. Kuo and B. R. Cheo, Polytechnic Institute of New York, Long Island Center, Long Island, New York
- 6Q12 HEATING RATE EQUATIONS OF CHARGED PARTICLES BY RF FIELDS AT CYCLOTRON RESONANCES
S. P. Kuo and B. R. Cheo, Polytechnic Institute of New York, Long Island, New York; and D. Wu, New York Institute of Technology, Old Westbury, New York
- 6Q13 THE Z-PINCH OF A GAS JET
B. A. Hammel, L. A. Jones, and M. Hamm, Los Alamos National Laboratory, Los Alamos, New Mexico
- 6Q14 SURFACE EFFECT ACCORDING TO THE THERMODYNAMICS OF ACCUMULATION PROCESSES IN PLASMA HEATING OF SOLID PARTICLES
Marin R. Mehandjiev, SEO, Sofia, Bulgaria