

Monday, May 17, 1982
8:30 A.M., Tory Auditorium ("Egg")

INTRODUCTORY SESSION

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

Monday, May 17, 1982
9:00 A.M., Tory "Egg"

Oral Session 1A - INTENSE ELECTRON AND ION BEAMS I
Session Chairman - J.A. Nation

- 1A1 THEORY OF FLOW ENHANCEMENT IN MAGNETICALLY INSULATED ION ACCELERATION GAPS
S. Humphries, Jr., University of New Mexico, Albuquerque, New Mexico; J.W. Poukey and T.R. Lockner, Sandia National Laboratories, Albuquerque, New Mexico
- 1A2 HEATING OF SOLID BODIES BY ELECTRON AND LASER BEAMS
M.K. Bhattacharyya and D.T. Tuma, Carnegie-Mellon University, Pittsburgh, Pennsylvania
- 1A3-4 INVITED PAPER: MATERIAL SURFACE MODIFICATION WITH INTENSE, PULSED ION BEAMS - RECENT RESULTS AND PROSPECTS
J.W. Mayer, Cornell University, Ithaca, New York
- 1A5 ANALYSIS OF NON-AXISYMMETRIC PULSE POWER PROPAGATION IN BLACKJACK 5
E.M. Waisman and A. Wilson, S-Cubed, La Jolla, California
- 1A6 VOLTAGE-CURRENT CALCULATIONS FOR A REB CONVOLUTE DIODE DESIGN
E.M. Waisman, S-Cubed, La Jolla, California
- 1A7 SCALING OF RF LINACS TO HIGH CURRENTS
F.S. Felber, R.O. Hunter, Jr. and P. Wilson, Western Research Corp., San Diego, California
- 1A8 THEORY OF ACCELERATING GAP INDUCED OSCILLATIONS OF INTENSE ELECTRON BEAMS
R.J. Adler, Mission Research Corporation, Albuquerque, New Mexico
- 1A9 OPERATION OF A MULTIPLE PULSE FOILLESS DIODE
M. Buttram and G. Sauve, Sandia National Laboratories, Albuquerque, New Mexico
- 1A10 PLASMA OPENING SWITCH RESEARCH AT NRL
R.A. Meger, R.J. Comisso, G. Cooperstein, A.T. Drobot and S.A. Goldstein, Naval Research Laboratory, Washington, D.C.
- 1A11-12 INVITED PAPER: INDUCTION LINACS FOR INTENSE BEAM PRODUCTION
R.B. Miller, Sandia National Laboratories, Albuquerque, New Mexico

Monday, May 17, 1982
9:00 A.M., Room 256, Mackenzie Building

Oral Session 1B - LASER PLASMA INTERACTIONS I
Session Chairman - E.M. Campbell

- 1B1 ULTRA HIGH INTENSITY LASER PLASMA INTERACTIONS
M.D.J. Burgess, R. Dragila, R.H. Enns, G.B. Gillman, B. Luther-Davies, K.A. Nugent and G.J. Tallents, The Australian National University, Canberra, Australia
- 1B2 X-RAY SPECTROSCOPY OF LASER-PRODUCED PLASMA USING EMBEDDED-TRACER TARGETS
P.G. Burkhalter, M.J. Herbst, R.R. Whitlock and J. Grun, Naval Research Laboratory, Washington, D.C.
- 1B3 REDUCED HOT ELECTRON TRANSPORT ON A DIELECTRIC TARGET IRRADIATED BY A CO₂ LASER
R. Decoste, Institut de recherche d'Hydro-Québec, Varennes, Québec; J.-C. Kieffer, M. Piche, H. Pépin and P. Lavigne, INRS-Energie, Université du Québec
- 1B4 MEASUREMENT OF HOT ELECTRON TEMPERATURE IN CO₂ LASER PRODUCED PLASMAS
G.A. Kyrala and D.R. Bach, Los Alamos National Laboratory, Los Alamos, New Mexico
- 1B5 A CONSISTENT 1-D MODEL FOR RESONANTLY HEATED ELECTRON DISTRIBUTIONS
S.J. Gitomer and B. Bezzerides, Los Alamos National Laboratory, Los Alamos, New Mexico
- 1B6 LASER INDUCED UNIPOLAR ARCING
F. Schwirzke and H.G. Ulrich, Naval Postgraduate School, Monterey, California

1B7-8 INVITED PAPER: UV LASER MATTER INTERACTION PROCESSES
W. Seka, University of Rochester, Rochester, New York

1B9 LASER IONIZATION BASED ON RESONANCE SATURATION - A COMPARISON OF MEASUREMENT AND THEORY
R.M. Measures, P.G. Cardinal, M. Cappelli and H. Herchen, University of Toronto, Toronto, Ontario

Monday, May 17, 1982
9:00 A.M., Room 251, Mackenzie Building

Oral Session 1C - MAGNETOFLUID DYNAMICS
Session Chairman - E. Levi

- 1C1 SCALING OF MHD COMBUSTORS AND GENERATORS
D.W. Cott, Mountain States Energy, Butte, Montana
- 1C2 UNSTEADY HYDROMAGNETIC FLOW PAST A FLAT PLATE WITH IMPOSED SUCTION
S.T. Revankar, McMaster University, Hamilton, Ontario
- 1C3 ANALYSIS OF TRANSIENT MHD CHANNEL FLOWS BY A HYBRID LAX-WENDROFF/METHOD OF CHARACTERISTICS COMPUTER CODE
D.R. Wilson and C.S. Stewart, University of Texas, Arlington, Texas
- 1C4 LASER-DRIVEN MHD GENERATOR FOR SPACE APPLICATIONS
N.W. Jalufka, NASA Langley Research Center, Hampton, Virginia; S.H. Choi, Information and Control Systems; and J.H. Lee, Vanderbilt University
- 1C5 ANALYTICAL STUDY OF ELECTRIC FAULTS IN MHD FARADAY GENERATORS
S. Kuo and E. Levi, Polytechnic Institute of New York, Farmingdale, New York
- 1C6 RADIOFREQUENCY IONIZATION OF HELIUM WITH TURBULENT FLOW
M.E. Talaat, University of Maryland, College Park, Maryland
- 1C7 RAYLEIGH-TAYLOR INSTABILITIES OF A COMPRESSIBLE, PERFECTLY CONDUCTING PLANE LAYER
D.E. Parks, S-Cubed, La Jolla, California

Monday, May 17, 1982
9:00 A.M., Room 230, Mackenzie Building

Oral Session 1D - ULTRAFAST Z-PINCHES I
Session Chairman - A. Wilson

- 1D1 IMPLoding THIN FILM PLASMA LINERS
R.P. Gupta, M.M. Kekez, G.D. Lougheed and J.H. Lau, National Research Council of Canada, Ottawa, Ontario
- 1D2 SEMI-HYDRODYNAMIC MODEL FOR ION SEPARATION IN A FAST PINCH (Z OR THETA)
G. Barak and N. Rostoker, University of California, Irvine, California
- 1D3 SHOCK COMPRESSION OF A UNIFORM GAS-FILLED Z-PINCH
P.F.M. Baldock, P. Choi, A.E. Dangor, A.K.L. Dymoke-Bradshaw, D. Grimsley and J.D. Hares, Imperial College, London, U.K.
- 1D4 SPECTROSCOPIC STUDIES OF A GAS-PUFF Z-PINCH
R.E. Marrs, D.D. Dietrich, R.J. Fortner, M. Levine, D. Price and R. Stewart, Lawrence Livermore National Laboratory, Livermore, California
- 1D5-6 INVITED PAPER: SHIVA II INDUCTIVE PULSE POWER/PLASMA IMPLSION RESEARCH
W.L. Baker, C.W. Beason, W.S. Bigelow, J.H. Degnan, R.P. Henderson, B.J. Kohn, J.A. Lupo, W.F. McCullough, R.E. Reinovsky, N.F. Roderick and R.J. Sand, Air Force Weapons Laboratory, Kirtland AFB, New Mexico
- 1D7 GAP CLOSURE IN SMALL GAP MAGNETICALLY INSULATED POWER FEEDS
R.W. Stinnett, Sandia National Laboratories, Albuquerque, New Mexico
- 1D8 PLASMA DIODE ABLATION TEST IN PITHON
M.C. Friedman and A. Wilson, S-Cubed, La Jolla, California

Monday, May 17, 1982
9:00 A.M., Room 253, Mackenzie Building

Oral Session 1E - COMPACT TOROIDS AND REVERSED FIELD PINCHES
Session Chairman - W. Grossmann

- 1E1-2 INVITED PAPER: COMPACT TOROID FORMATION IN THE TRX-1 FIELD REVERSED THETA PINCH
A.L. Hoffman, Mathematical Sciences Northwest, Inc. Bellevue, Washington

- 1E3 ANALYSIS OF THE TIME EVOLUTION OF QUASI-STATIC, OHMICALLY-HEATED FIELD-REVERSED CONFIGURATIONS
D.J. Rej, K.F. McKenna and M. Tuszewski, Los Alamos National Laboratory, Los Alamos, New Mexico 1Q2 A CURRENT REVERSAL EXPERIMENT ON A MAGNETICALLY STABILIZED PLASMA COLUMN
R. Decoste, J.-L. Lachambre, M. Drouet, H. Mercure and M. Shoucri, Institut de recherche d'Hydro-Québec, Varennes, Québec
- 1E4 GENERATION AND DYNAMICS OF AN INTENSE ION RING IN A MAGNETIC MIRROR
K.O. Busby, D.A. Hammer, J.B. Greenly, G.D. Rondeau, P.D. Pedrow, J.A. Tuttle, M.P. Gaydar and R.N. Sudan, Cornell University, Ithaca, New York 1Q3 SPACE POTENTIAL MEASUREMENTS ON RENTOR WITH A HEAVY ION BEAM PROBE
P.M. Schoch, W.C. Jennings and R.L. Hickok, Rensselaer Polytechnic Institute, Troy, New York
- 1E5 EXPERIMENTS ON MIXED-CT CONFIGURATION IN RECE-CHRISTA
R. Jayakumar, M.R. Parker, D. Taggart, H.J. Hopman and H.H. Fleischmann, Cornell University, Ithaca, New York 1Q4 HEAVY ION BEAM PROBES FOR ISX-B AND TEXT
J. Mathew, G.A. Hallock, J.F. Lewis, W.C. Jennings and R.L. Hickok, Rensselaer Polytechnic Institute, Troy, New York
- 1E6 ACCELERATION OF MAGNETICALLY CONFINED PLASMA RINGS
C.W. Hartman and J.H. Hammer, Lawrence Livermore National Laboratory, Livermore, California 1Q5 COMPARISON OF THOMSON SCATTERING AND HEAVY ION BEAM PROBE n_e and T_e MEASUREMENTS ON RENTOR
S.R.G. Biron, J. Mathew, P.M. Schoch, W.C. Jennings and R.L. Hickok, Rensselaer Polytechnic Institute, Troy, New York
- 1E7 MEASUREMENT OF PLASMA PARAMETERS IN THE PROTO S-1C SPHEROMAK
S. Paul, S. Cowley, A. Janos, D. McNeill, C. Munson, M. Newhouse and M. Yamada, Princeton University, Princeton, New Jersey 1Q6 HEAVY ION BEAM PROBE FOR HIGH POWER EBT-S
J.R. Goyer, G.A. Hallock, L. Solensten, K.A. Connor, and R.L. Hickok, Rensselaer Polytechnic Institute, Troy, New York
- 1E8 THE ZT-40M EXPERIMENT
ZT-40M Team (presented by J.N. Di Marco), Los Alamos National Laboratory, Los Alamos, New Mexico
- 1E9-10 INVITED PAPER: RECENT HIGH TEMPERATURE RESULTS FROM THE TPE-1R(M) REVERSED FIELD PINCH EXPERIMENT
Y. Maejima, T. Shimada, Y. Hirano, P.G. Carolan¹, C.W. Gowers¹ and K. Ogawa, Electrotechnical Laboratory, Ibaraki, Japan
¹Culham Laboratory, Abingdon, U.K.

Monday, May 17, 1982
9:00 A.M., East Lobby, Tory Building

Poster Session 1R - PLASMA WAVES, INSTABILITIES AND ANTENNAS

- Monday, May 17, 1982
9:00 A.M., East Lobby, Tory Building
Poster Session 1P - HIGH POWER MICROWAVE AND SUB-MILLIMETRE WAVE GENERATION I
- 1P1 BEAM DENSITY AND THERMAL EFFECTS ON FREE ELECTRON LASER INSTABILITY
J.A. Davies, R.C. Davidson and G.L. Johnston, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 1P2 HIGHER HARMONIC EMISSION FROM RELATIVISTIC ELECTRONS IN A LONGITUDINAL MAGNETIC WIGGLER
W.A. McMullin and R.C. Davidson, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 1P3 STOCHASTIC INSTABILITY FOR RELATIVISTIC ELECTRON MOTION IN COMBINED HELICAL WIGGLER, AND TRANSVERSE AND LONGITUDINAL WAVE FIELDS
R.C. Davidson and W.A. McMullin, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 1P4 STUDIES OF EMISSION IN A MILLIMETER-WAVE, COLLECTIVE FREE-ELECTRON LASER
S.H. Gold, R.H. Jackson, R.K. Parker, H.P. Freund¹, V.L. Granatstein, P.C. Efthimion² and A.K. Kinkead, Naval Research Laboratory, Washington, D.C.
¹Science Applications Inc., McLean, Virginia
²JAYCOR, Inc., Alexandria, Virginia
- 1P5 HELICAL MAGNETIC FIELD EFFECTS ON BEAM QUALITY
R.H. Jackson, Mission Research Corp., Alexandria, Virginia; R.K. Parker, S.H. Gold, Naval Research Laboratory, Washington, D.C. and P.E. Ferguson, Varian Associates, Inc., Palo Alto, California
- 1P6 EFFECTS OF AN AXIAL GUIDE FIELD ON THE OPERATION OF FREE ELECTRON LASERS
S.P. Kuo, Polytechnic Institute of New York, Farmingdale, New York
- 1P7 INSERTION OF ELECTRONS INTO A FEL WITH NEAR RESONANT WIGGLER AND AXIAL MAGNETIC FIELDS
J. Fajans, G. Bekefi and B. Lax, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 1P8 RIPPLED-FIELD MAGNETRON
G. Bekefi, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 1P9 A VELOCITY DIAGNOSTIC FOR A HIGH CURRENT LOWBITRON BEAM
R.E. Shefer, G. Bekefi and D.A. Kirkpatrick, Massachusetts Institute of Technology, Cambridge, Massachusetts
- Monday, May 17, 1982
9:00 A.M., East Lobby, Tory Building
Poster Session 1Q - PLASMA DIAGNOSTICS I
- 1R1 PARAMETRIC COUPLING AND ION TURBULENCE IN A CO₂ LASER-PLASMA INTERACTION
C.J. Walsh and H.A. Baldis, National Research Council of Canada, Ottawa, Ontario and R.G. Evans, Rutherford Lab., Chilton, U.K.
- 1R2 ON THE EXCITATION OF LINEAR AND NONLINEAR ION-ACOUSTIC WAVES WITH A GRID
M. Khazei, J. Bulson and K. Lonngren, University of Iowa, Ames, Iowa
- 1R3 ION TAIL FORMATION AND ELECTRON HEATING PERPENDICULAR TO MAGNETIC FIELD IN CURRENT DRIVEN ION ACOUSTIC INSTABILITY
O. Ishihara and A. Hirose, University of Saskatchewan, Saskatoon, Saskatchewan
- 1R4 TRANSITION FROM SINGLE TO MULTIPLE DOUBLE LAYERS
C. Chan and N. Hershkowitz, University of Wisconsin, Madison, Wisconsin
- 1R5 MICROWAVE INTERACTION WITH NITROGEN
W.M. Bollen, M. Nagurny, Mission Research Corp., Alexandria, Virginia and M. Read, Naval Research Laboratory, Washington, D.C.
- 1R6 MICROWAVE COUPLING IN BREAKDOWN GASES
C.L. Yee, Mission Research Corp., Alexandria, Virginia and A.W. Ali, Naval Research Laboratory, Washington, D.C.
- 1R7 PLASMA SHEATH FORMATION, ION ACCELERATION AND FLUCTUATIONS IN "STEADY" STATE
C.K. Birdsall, Nagoya University, Nagoya, Japan
- 1R8 THE EFFECTS OF RADIAL BEAM DENSITY PROFILES ON THE BEAM-PLASMA INSTABILITY
M.E. Jones, Los Alamos National Laboratory, Los Alamos, New Mexico
- 1R9 CHARACTERISTICS OF BEAM PLASMA SYSTEMS
T. Intrator, N. Hershkowitz, University of Wisconsin, Madison, Wisconsin and R.A. Stern, University of Colorado, Boulder, Colorado
- 1R10 NONLINEAR MAGNETOSTATIC MODES
M.Y. Yu, P.K. Shukla, Ruhr-Universität, Bochum, F.R.G.; K.H. Spatschek, Universität Essen, Essen, F.R.G. and H.U. Rahman, Quaid-i-Azam University, Islamabad, Pakistan
- 1R11 PONDEROMOTIVE FORCE NEAR THE CYCLOTRON HARMONIC RESONANCES
S.P. Kuo, Polytechnic Institute of New York, Farmingdale, New York
- Monday, May 17, 1982
7:30 P.M., Tory "Egg"
Oral Session 2A - INTENSE ELECTRON AND ION BEAMS II
Session Chairman - C.A. Ekdahl
- 1Q1 TFTR MULTI-CHANNEL NEUTRON COLLIMATOR WITH WIDE-DYNAMIC-RANGE
H.W. Hendel, C. Clifford and L.E. Samuelson, Princeton University, Princeton, New Jersey 2A1 STUDY OF DOUBLE FOIL ACCELERATION BY REB IRRADIATION
S. Higaki, K. Imasaki, S. Miyamoto, T. Ozaki, T. Yabe, S. Nakai and C. Yamanaka, Osaka University, Osaka, Japan

- 2A2 MAGNETIZED FUEL IN INERTIAL CONFINEMENT FUSION:
BREAKEVEN AT 10KJ, 10¹⁰ W??
I. Lindemuth, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2A3-4 INVITED PAPER: MEASUREMENT OF ENHANCED STOPPING OF MeV DEUTERONS IN TARGET-ABLATION PLASMAS
F.C. Young, Naval Research Laboratory, Washington, D.C.
- 2A5 VLASOV TREATMENT OF RESISTIVE BEAM INSTABILITIES
W.M. Sharp, Science Applications, Inc., McLean, Virginia
- 2A6 MULTI-COMPONENT SIMULATION OF THE RESISTIVE HOSE INSTABILITY
R.F. Hubbard¹, G. Joyce, M. Lampe and S.P. Slinker¹, U.S. Naval Research Laboratory, Washington, D.C.
¹JAYCOR, Inc., Alexandria, Virginia
- 2A7 DYNAMICS OF COLLECTIVE ION ACCELERATION IN A LUCE DIODE
R.J. Faehl, Los Alamos National Laboratory, Los Alamos, New Mexico and D. Sullivan, Mission Research Corporation, Albuquerque, New Mexico
- 2A8 ALTERNATIVES TO CYCLOTRONS FOR THE PRODUCTION OF RADIOISOTOPES FOR POSITRON EMISSION TOMOGRAPHY: COLLECTIVE ACCELERATORS
W.W. Destler and M. Reiser, University of Maryland, College Park, Maryland
- 2A9 ALTERNATIVES TO CYCLOTRONS FOR THE PRODUCTION OF RADIOISOTOPES FOR POSITRON EMISSION TOMOGRAPHY: THE PLASMA FOCUS DEVICE
R.L. Gullickson, Defense Nuclear Agency, Washington, D.C. and J.H. Lee, Vanderbilt University, Nashville, Tennessee
- Monday, May 17, 1982
7:30 P.M., Room 256, Mackenzie Building
- Oral Session 2B - LASER PLASMA INTERACTIONS II
Session Chairman - B.H. Ripin
- 2B1-2 INVITED PAPER: IMPLOSION OF VARIOUS STRUCTURE TARGETS AT ILE OSAKA
C. Yamanaka and M. Nakatsuka, ILE Osaka University, Osaka, Japan
- 2B3 FUSION ALPHA PARTICLE ENERGY MEASUREMENTS WITH CRYOGENIC TARGETS IMPLoded WITH 1.05 μm and 0.53 μm LASER LIGHT
C.L. Shepard, J.A. Tarvin and D.C. Slater, KMS Fusion, Inc., Ann Arbor, Michigan
- 2B4 24 BEAM NANOSECOND IRRADIATION EXPERIMENTS WITH SPHERICAL TARGETS
M.C. Richardson, D.M. Villeneuve, B. Yaakobi, J. Delettrez, S. Skupsky, W. Friedman, J. Hoose, S. Letzring, J. Rizzo, R.L. McCrory and J.M. Soures, University of Rochester, Rochester, New York
- 2B5 ENERGY TRANSPORT AND PARTITIONING IN NANOSECOND, 1 μm SPHERICAL TARGET IRRADIATION EXPERIMENTS
J. Delettrez, B. Yaakobi, M.C. Richardson, T. Boehly, R.S. Marjoribanks, S. Letzring, R. Hutchinson, R.L. McCrory, J.M. Soures, University of Rochester and G.D. Enright, National Research Council of Canada, Ottawa, Ontario
- 2B6 TIME RESOLVED X-RAY SPECTROSCOPY OF OMEGA LASER DRIVEN SYMMETRIC COMPRESSIONS
R.S. Marjoribanks, M.C. Richardson, S.A. Letzring and J. Delettrez, University of Rochester, Rochester, New York
- 2B7 DIRECT MEASUREMENTS OF CORE ρR OF LASER FUSION TARGETS
S. Kacenjar, L.M. Goldman, S. Skupsky, A. Entenberg, M.C. Richardson and J.M. Soures, University of Rochester, Rochester, New York
- 2B8 LASER INDUCED PONDEROMOTIVE DRIFTS IN A MAGNETOPLASMA
M.S. Sodha and D. Subbarao, Indian Institute of Technology, New Delhi, India
- 2B9 LINEAR GENERATION OF A B-FIELD IN STRONGLY INHOMOGENEOUS LASER PLASMAS
V. Stefan, Massachusetts Institute of Technology, Cambridge, Massachusetts
- Monday, May 17, 1982
7:30 P.M., Room 251, Mackenzie Building
- Oral Session 2C - MIRRORS AND EBT
Session Chairman - T.C. Simonen
- 2C1 POTENTIAL MEASUREMENTS IN THE PHAEDRUS TANDEM MIRROR
N. Hershkowitz, J. Pew, B. Nelson, R. Breun, S. Golovato, L. Yujiri, R. Goettsch, A. Wintenberg and D. Sing, University of Wisconsin, Madison, Wisconsin
- 2C2 PLASMA INJECTION INTO A STEADY-STATE MIRROR FROM A REPETITELY PULSED SOURCE
W.D. Getty, P.S. Jacobs and D.G. Michelini, University of Michigan, Ann Arbor, Michigan
- 2C3 OPERATIONAL CHECKOUT OF THE TMX UPGRADE TANDEM MIRROR FACILITY
TMX Upgrade Group, Lawrence Livermore National Laboratory, Livermore, California
- 2C4 AXISYMMETRIC MODIFICATIONS TO MFTF-B
K.I. Thomassen, Lawrence Livermore National Laboratory, Livermore, California
- 2C5 THE MISSOURI RESEARCH AND EDUCATIONAL MIRROR FUSION FACILITY
M.A. Prelas, W. Meyer, C.B. Wallace, University of Missouri, Columbia, Missouri and R. Juhala and T.J. Menne, McDonnell-Douglas Corporation
- 2C6 SCALING OF CORE ELECTRONS IN EBT-S
T. Uckan, L.A. Berry, R.J. Colchin, G.R. Haste, D.L. Hillis and R.K. Richards, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 2C7 NONADIABATIC LOSSES OF HOT IONS FROM AN ION-RING STABILIZED EBT REACTOR
R.E. Juhala, McDonnell Douglas Astronautics Company, St. Louis, Missouri; M.A. Prelas and C.B. Wallace University of Missouri, Columbia, Missouri
- 2C8 A KINETIC TREATMENT OF ALPHA PARTICLE LOSS AND ENERGY DEPOSITION IN EBT
M.E. Fenstermacher, University of Michigan, Ann Arbor, Michigan and N.A. Uckan, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 2C9-10 INVITED PAPER: ION CYCLOTRON HEATING EXPERIMENTS ON EBT-S
F.W. Baity, W.A. Davis, O.C. Eldridge, D.L. Hillis, D.A. Rasmussen and R.K. Richards, Oak Ridge National Laboratory, Oak Ridge, Tennessee; T.L. Owens and J.H. Mullen, McDonnell Douglas Astronautics Company
- 2C11 ELECTROMAGNETIC WAVE PROPAGATION AND INSTABILITIES IN A RING-PLASMA SYSTEM
M.L. Mittal, Indian Institute of Technology, Bombay, India
- 2C12 STABILIZATION OF THE FLUTE INSTABILITY BY A D.C. ELECTRIC FIELD IN TOROIDAL PLASMAS
I. Alexeff and J.R. Roth, University of Tennessee, Knoxville, Tennessee
- 2C13 ENHANCED TRAPPING OF ELECTRONS BY THE CYCLOTRON RESONANCE IN A BOUNCING FIELD
B.R. Cheo and S.P. Kuo, Polytechnic Institute of New York, Farmingdale, New York
- Monday, May 17, 1982
7:30 P.M., Room 230, Mackenzie Building
- Oral Session 2D - ULTRAFast Z-PINCHES II
Session Chairman - L.F. Chase
- 2D1 ANGULAR-DEPENDENT SHIVA FOIL IMPLSIONS
A. Wilson and P.G. Steen, S-Cubed, La Jolla, California
- 2D2 COMPARISON OF MEASUREMENTS AND CALCULATIONS FOR AN IMPLoding CYLINDER
B.A. Watson, L.F. Chase, J.P. Knauer, J.D. Perez and L.M. Tannenwald, Lockheed Palo Alto Laboratory, Palo Alto, California
- 2D3 A SCALING LAW FOR K-LINE RADIATION IN THE IMPLoding ARGON GAS PUFF
S. Wong, C. Gilman, P. Sincerny and T. Young, Physics International Company, San Leandro, California
- 2D4 THE DYNAMICS OF IMPLoding ARGON PLASMA DRIVEN BY HIGH POWER PULSE GENERATORS
W. Clark, R. Richardson, J. Brannon and M. Wilkinson, Maxwell Laboratories, Inc., San Diego, California
- 2D5-6 INVITED PAPER: THE HYDROMAGNETIC RAYLEIGH-TAYLOR INSTABILITY IN IMPLoding PLASMA LINERS
T.W. Hussey, Sandia National Laboratories, Albuquerque, New Mexico
- 2D7 DISASSEMBLY OF IMPLoded HIGH DENSITY PLASMAS
J.S. Pearlman, J.C. Riordan, N. Rostoker and N.R. Pereira, Maxwell Laboratories, Inc., San Diego, California
- 2D8 IMPLoding Z PINCH X-RAY LASER
G. Dahlbacka, R. Dukart, Physics International Company, San Leandro, California; R. Fortner, D. Dietrich and R. Stewart, Lawrence Livermore National Laboratory, Livermore, California

Monday, May 17, 1982
7:30 P.M., Room 253 Mackenzie Building

Oral Session 2E - FUSION REACTOR TECHNOLOGY
Session Chairman - C. Choi

- 2E1 TECHNOLOGICAL EVALUATION OF LASER-PELLET FUSION REACTORS WITH ION-PUSHERS AND TOKAMAKS
S.M. Ayub, Karachi, Pakistan
- 2E2 TIME DEPENDENT THERMAL, STRESS RESPONSE - FIRST WALLS
J.A. Fillo, Brookhaven National Laboratory, Upton, New York
- 2E3 ENGINEERING DEVELOPMENT OF MAGNETIC CONFINEMENT FUSION REACTOR FIRST WALL COMPONENTS
J.W.H. Chi, J.R. Eason and R.E. Gold, Westinghouse Fusion Programs, Pittsburgh, Pennsylvania
- 2E4 THE IGNITOR VACUUM VESSEL
G. Bonizzoni, Associazione CNR-EURATOM sulla Fusione, Milano, Italy and R. De Luca, Stone & Webster Engineering Corporation, Boston, Massachusetts
- 2E5 PARAMETRIC STUDY OF MIRROR CONFINEMENT BASED FUSION ENGINEERING DEVICES
J.T. Woo, Rensselaer Polytechnic Institute, Troy, New York
- 2E6 CHALLENGING ASPECTS OF MODULAR STELLARATOR POWER REACTORS
I.N. Sviatoslavsky, S.W. Van Sciver, G.A. Emmert, G.L. Kulcinski, J.L. Shohet, A.W. Bailey, K.J. Lee and K. Yuan, University of Wisconsin, Madison, Wisconsin
- 2E7-8 INVITED PAPER: THE HIBALL HEAVY ION BEAM DRIVEN FUSION REACTOR
G.L. Kulcinski, G.A. Moses, W.F. Vogelsang, University of Wisconsin, Madison, Wisconsin; G. Kessler, Institut für Neutronen Physik Reaktortechnik, Karlsruhe, F.R.G.; R. Bock, Gesellschaft für Schwerionenforschung, Darmstadt, F.R.G. and S. Witkowski, Max Planck Institut für Quantenoptik, München, F.R.G.
- 2E9 A FUSION DRIVEN SYNDFUEL PRODUCER - HYFIRE
J.A. Fillo, J.R. Powell, R. Benenati, Brookhaven National Laboratory, Upton, New York; T.C. Varljen and J.S. Karbowski, Westinghouse Electric Corporation, Pittsburgh, Pennsylvania
- 2E10 NEUTRONS FROM Li + Li REACTIONS
E. Norbeck and P.L. Chung, University of Iowa, Iowa City, Iowa
- 2E11 LINAC-DRIVEN LIGHT-ION FUSION REACTOR CONCEPTUAL DESIGN
L.W. Braverman, S.L. Thomson and W.O. Allen, Bechtel Group, Inc., San Francisco, California
- 2E12 A COMPARISON OF TWO HEAVY ION DRIVER SYSTEMS
M.D. Nahemow, Westinghouse R&D Center, Pittsburgh, Pennsylvania

- 2P7 A HIGH POWER CERENKOV MICROWAVE SOURCE
S. Von Laven, J. Branscum, J. Golub, R. Layman and J. Walsh, Dartmouth College, Hanover, New Hampshire
- 2P8 BGK SOLUTIONS TO THE FREE ELECTRON LASER INSTABILITY
B. Lane and R.C. Davidson, Massachusetts Institute of Technology, Cambridge, Massachusetts

Monday, May 17, 1982
7:30 P.M., East Lobby, Tory Building

Poster Session 2Q - PLASMA DIAGNOSTICS II

- 2Q1 QUASI-OPTICAL TECHNIQUES FOR MEASURING CYCLOTRON EMISSION FROM PLASMAS IN METALLIC CHAMBERS
G.D. Tsakiris, Z.S. Wang and D.A. Boyd, University of Maryland, College Park, Maryland
- 2Q2 ELECTRON CYCLOTRON RADIATION DIAGNOSTICS FOR TMX-UPGRADE
R.F. Ellis, G. Tsakiris, D. Boyd, University of Maryland, College Park, Maryland and T. Casper, Lawrence Livermore National Laboratory
- 2Q3 A SINGLE SELECTING ELECTRODE ELECTRON ENERGY ANALYZER FOR MAGNETIZED PLASMAS
D. Arion and R.F. Ellis, University of Maryland, College Park, Maryland
- 2Q4 THE MEASUREMENT OF HYDROGEN ATOM DENSITIES IN AN INVERSE BRUSH CATHODE DISCHARGE
B. Leblanc and B.L. Stansfield, INRS-Energie, Varennes, Québec
- 2Q5 MULTI-POINT THOMSON SCATTERING
F.M. Levinton and G.A. Navratil, Columbia University, New York, N.Y.
- 2Q6 HIGH POWER SUBMILLIMETER-WAVE COLLECTIVE THOMSON SCATTERING DIAGNOSTICS
P. Voskoboinikov, W.J. Mulligan, D.R. Cohn, R.J. Temkin and H.R. Fetterman, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 2Q7 BANDPASS X-RAY DIODE AND MULTIPLIER TUBE FOR PLASMA DIAGNOSTICS
C.L. Wang, Lawrence Livermore National Laboratory, Livermore, California
- 2Q8 ENERGY ANALYSIS AND TRACK-PLATE DETECTION OF LASER-PRODUCED IONS
C.R. Parsons and M.J. Rhee, University of Maryland, College Park, Maryland

Monday, May 17, 1982
7:30 P.M., East Lobby, Tory Building

Poster Session 2R - COMPACT TOROIDS & REVERSED FIELD PINCHES I

Monday, May 17, 1982
7:30 P.M., East Lobby, Tory Building

Poster Session 2P - HIGH POWER MICROWAVE AND SUB-MILLIMETER WAVE GENERATION II

- 2P1 ELECTRON BEAM PROPAGATION THROUGH A LINEAR WIGGLER IN AN AXIAL GUIDE FIELD
J.A. Pasour, C.W. Roberson, Naval Research Laboratory, Washington, D.C.; F. Mako, JAYCOR, Inc. and R. Lucey, Pulse Sciences, Inc.
- 2P2 A LONG PULSE INDUCTION LINAC WITH A COLD CATHODE
F. Mako, JAYCOR, Inc.; R. Lucey, Pulse Sciences, Inc.; C.W. Roberson and J.A. Pasour, Naval Research Laboratory, Washington, D.C.
- 2P3 HIGH-POWER MICROWAVE GENERATION FROM AN INTENSE ROTATING ELECTRON BEAM
W.W. Destler, D. Calderone, R. Kulkarni, W. Namkung, R. Weiler and C.D. Striffler, University of Maryland, College Park, Maryland
- 2P4 TEST RESULTS ON THE VARIAN 60 GHz GYROTRON
K. Felch, S. Evans, L. Fox, H. Jory, J. Shively and S. Spang, Varian Associates, Palo Alto, California
- 2P5 THE EMITRON: A NEW MICROWAVE DEVICE
G. Craig and J. Pettibone, Lawrence Livermore National Laboratory, Livermore, California and A.T. Drobot, Science Applications, Inc.
- 2P6 HIGH POWER, EXTREMELY BROAD BAND MILLIMETER WAVELENGTH RADIATION FROM INTENSE RELATIVISTIC ELECTRON BEAM-PLASMA INTERACTIONS
G.A. Benford, K.G. Kato and D. Tzach, University of California, Irvine, California

- 2R1 OSCILLATING FIELD CURRENT DRIVE FOR REVERSED FIELD PINCH DISCHARGES
K.F. Schoenberg, D.A. Baker, R.F. Gribble and W. Reass, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2R2 OPTICAL OBSERVATION OF THE PLASMA BEHAVIOR IN A REVERSED FIELD PINCH
T. Tsukada, K. Yasuoka, M. Saigusa and I. Hayashi, Tokyo Institute of Technology, Tokyo, Japan
- 2R3 STUDIES OF THE ZT-40M REVERSED-FIELD PINCH EQUILIBRIUM USING MULTICHORD INTERFEROMETRY
A.R. Jacobson, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2R4 EQUILIBRIUM CONTROL EXPERIMENTS ON ZT-40M
R.S. Massey, C.J. Buchenauer, L.C. Burkhardt, A. Haberstich, A.R. Jacobson, G. Miller, R.W. Moses, R.A. Nebel, K.F. Schoenberg, R.L. Spencer and R.G. Watt, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2R5 FORMATION OF ZT-40M REVERSED-FIELD PINCH EXPERIMENT WITH DIFFERENT CURRENT RISETIMES
L.C. Burkhardt, R.B. Howell, J.C. Ingraham, J.A. Phillips, K.S. Thomas, R.G. Watt and P.G. Weber, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2R6 FABRICATION OF THE S-1 SPHEROMAK DEVICE
A. Janos, R. Ellis, Jr., J. Joyce, J. Sennis and M. Yamada, Princeton University, Princeton, New Jersey
- 2R7 OBSERVATION AND PASSIVE CONTROL OF SPHEROMAK GROSS MHD INSTABILITIES
C. Munson, M. Yamada and S. Cowley, Princeton University, Princeton, New Jersey

- 2R8 ANALYTIC SNOWFLOW-SHARP BOUNDARY MODEL OF A MAGNETIZED CO-AXIAL GUN
W.C. Turner, Lawrence Livermore National Laboratory, Livermore, California
- 2R9 IMPURITY STUDIES DURING THE DISCHARGE PHASE OF THE FORMATION OF SPHEROMAKS IN THE LOS ALAMOS PROTOTYPE EXPERIMENT
H.W. Hoida, D.A. Platts, J. Marshall, A.R. Sherwood and T.R. Jarboe, Los Alamos National Laboratory, Los Alamos, New Mexico
- 2R10 ENERGY BALANCE AND OHMIC HEATING IN THE CTX SPHEROMAK
C.W. Barnes, I. Henins, H.W. Hoida, T.R. Jarboe, S.O. Knox, R.K. Linford, J. Lipson, J. Marshall, A.R. Sherwood, Los Alamos National Laboratory, Los Alamos, New Mexico; R.A. Hulse and D.E. Post, Princeton University
- Tuesday, May 18, 1982
11:30 A.M., Tory "Egg"
- Oral Session 3A - STELLARATORS AND TOKAMAKS
- 3A1-2 INVITED PAPER: STELLARATORS FOR FUSION REACTORS?!
G. Grieger, Max-Planck-Institute für Plasmaphysik Garching, F.R.G.
- Tuesday, May 18, 1982
9:00 A.M., Room 256, Mackenzie Building
- Oral Session 3B - LASER PLASMA INTERACTIONS III
Session Chairman - M.C. Richardson
- 3B1-2 INVITED PAPER: THE EFFECT OF SYMMETRY REQUIREMENTS ON WAVELENGTH SCALING FOR DIRECTLY DRIVEN LASER FUSION IMPLSIONS
J. Lindl, C. Max and W. Mead, Lawrence Livermore National Laboratory, Livermore, California
- 3B3 UNIFORM LASER-ABLATIVE ACCELERATION OF TARGETS AT 10^{14} W/cm²
B.H. Ripin, S.P. Obenschain, R.R. Whitlock, E.A. McLean, Naval Research Laboratory, Washington, D.C.; R. Price, D. Phillion and E.M. Campbell, Lawrence Livermore National Laboratory, Livermore, California
- 3B4 LASER PLASMA COUPLING IN LONG PULSE, LONG SCALE LENGTH PLASMAS
E.M. Campbell, R.H. Price, D.W. Phillion, K. Estabrook, M.D. Rosen, R.E. Turner, Lawrence Livermore National Laboratory, Livermore, California; S.P. Obenschain, R. Whitlock, E. McLean, and B. Ripin, Naval Research Laboratory, Washington, D.C.
- 3B5 OBSERVATION OF ABLATIVELY ACCELERATED FOIL TARGETS WITH X-RAY BACKLIGHTING
R.H. Price, E.M. Campbell, M.D. Rosen, D.W. Phillion, Lawrence Livermore National Laboratory, Livermore, California; R.R. Whitlock, S.P. Obenschain, E. McLean and B. Ripin, Naval Research Laboratory, Washington, D.C.
- 3B6 HEATING OF SINGLE AND DOUBLE-FOIL LASER IRRADIATED TARGETS AT HIGH LASER ENERGY
E.A. McLean, S.P. Obenschain, R.R. Whitlock, B.H. Ripin, Naval Research Laboratory, Washington, D.C.; D.W. Phillion, E.M. Campbell, R.H. Price and M.D. Rosen, Lawrence Livermore National Laboratory, Livermore, California
- 3B7 THE EFFECT OF LONG WAVELENGTH LANGMUIR TURBULENCE ON PARAMETRIC INSTABILITIES IN AN ELECTRON PLASMA
S. Takeshita, R.S.B. Ong and J.J. Duderstadt, University of Michigan, Ann Arbor, Michigan
- 3B8 TARGET VAPOUR EFFECTS ON ENERGY TRANSFER IN LASER IRRADIATED ALUMINIUM TARGETS
J.S. Goela and T. Hemadri, Indian Institute of Technology, Kanpur, India
- Tuesday, May 18, 1982
9:00 A.M., Room 251, Mackenzie Building
- Oral Session 3C - NUCLEAR PUMPED LASERS
Session Chairman - M.A. Prelas
- 3C1 AN EFFICIENT NUCLEAR EXCITED XENON FLASHLAMP
J.D. Cox, R.A. Walters and R.T. Schneider, University of Florida, Gainesville, Florida
- 3C2 STUDY OF A SIMULATED DNP LASER PLASMA
M. Vialle, M. Fitaire and A.M. Pointu, Université de Paris-Sud, Orsay, France
- 3C3 INSITU OBSERVATION OF O₂(¹Δ) DURING A TRIGA REACTOR PULSE
M. Zediker and G.H. Miley, University of Illinois, Urbana, Illinois
- 3C4 STUDIES OF THE NUCLEAR PUMPED O₂(¹Δ)-I₂ LASER
D. Shannon, M.S. Zediker and G.H. Miley, University of Illinois, Urbana, Illinois
- 3C5-6 INVITED PAPER: A PROGRAM FOR LARGE-SCALE NPL DEVELOPMENT
F.P. Boody, Nuclear-Pumped Laser Corporation, Kingston, New Jersey
- 3C7 DESIGN STUDIES OF VOLUME PUMPED PHOTOLYTIC LASERS
M.A. Prelas and F.P. Boody, Nuclear Pumped Laser Corp., Kingston, New Jersey
- 3C8 CHARGED PARTICLE TRANSFER IN URANIUM MICROPELLETS
M.A. Prelas and F.P. Boody, Nuclear-Pumped Laser Corporation, Kingston, New Jersey
- 3C9 PHOTOLYTIC DUAL-MEDIA NUCLEAR PUMPING OF EXCIMER LASERS
F.P. Boody and M.A. Prelas, Nuclear-Pumped Laser Corporation, Kingston, New Jersey
- 3C10 NUCLEAR-PUMP FLUID-MIXING CO₂ LASER
D. Bulet and G.H. Miley, University of Illinois, Urbana, Illinois
- 3C11 CHEMICAL SYNTHESIS: RADIOLYTIC DYNAMICS
A.K.K. Chung and M.A. Prelas, University of Missouri-Columbia, Columbia, Missouri
- Tuesday, May 18, 1982
9:00 A.M., Room 230, Mackenzie Building
- Oral Session 3D - HIGH POWER MICROWAVE AND SUB-MILLIMETRE WAVE GENERATION
Session Chairman - K.R. Chu
- 3D1-2 INVITED PAPER: FREE ELECTRON LASERS USING INJECTED BEAMS WITH SPIRALLING RELATIVISTIC ELECTRONS
T.C. Marshall and A. Grossman, Columbia University, New York, N.Y.
- 3D3 AN EFFICIENT HIGH-POWER DOPPLER-SHIFTED ELECTRON-CYCLOTRON MASER
J.L. Vomvoridis, JAYCOR, Alexandria, Virginia
- 3D4 EXTENDED TEMPORAL MICROWAVE EMISSION FROM A MASER USING ELECTRONS ORBITING A POSITIVELY-CHARGED WIRE
I. Alexeff, P. Dyer, H.F. Karimy and W. Nakoneczny, University of Tennessee, Knoxville, Tennessee
- 3D5 AN INVESTIGATION OF EFFICIENCY ENHANCEMENT IN AN OVERMODED, SINGLE CAVITY GYROTRON OSCILLATOR
Y. Carmel, University of Maryland, College Park, Maryland; J. Levine, D. Kim, M. Read, K.R. Chu, Naval Research Laboratory, Washington, D.C. and B. Arfin, Lawrence Livermore National Laboratory
- 3D6 TRANSVERSE ELECTRIC MODE IN A DISK-LOADED WAVEGUIDE FOR THE GYROTRON APPLICATION
J.Y. Choe and H.S. Uhm, Naval Surface Weapons Center, White Oak, Maryland
- 3D7-8 INVITED PAPER: NEW CONFIGURATIONS OF THE GYROTRON TRAVELLING WAVE AMPLIFIER
Y.Y. Lau, Science Applications Inc., McLean, Virginia
- 3D9 THEORY OF Cerenkov RADIATION FOR A RELATIVISTIC ELECTRON BEAM PROPAGATING THROUGH A DIELECTRON LOADED WAVEGUIDE
H.S. Uhm, Naval Surface Weapons Center, White Oak, Maryland
- 3D10 RELATIVISTIC MAGNETRON INTERACTION
T.E. Ruden, Varian Associates, Inc., Beverly, Massachusetts
- 3D11 A NEW APPROACH TO THE RELATIVISTIC MAGNETRON
G.E. Thomas, Varian Associates, Inc., Beverly, Massachusetts
- 3D12 DESIGN OF A MILLIMETER WAVE SOURCE USING A VIRTUAL CATHODE OSCILLATOR (VIRCATOR)
D.J. Sullivan and C.A. Ekdahl, Mission Research Corporation, Albuquerque, New Mexico

Tuesday, May 18, 1982
9:00 A.M., Room 253, Mackenzie Building

Oral Session 3E - PLASMA WAVES, INSTABILITIES AND ANTENNAS
Session Chairman - I.P. Shkarofsky

- 3E1 A PAIRED COMPARISON OF HIGH FREQUENCY RF EMISSION FROM TWO CONFIGURATIONS OF ELECTRIC FIELD DOMINATED PLASMA
J.R. Roth, P.W. Hayman and R.L. Pastel, University of Tennessee, Knoxville, Tennessee
- 3E2 ELECTROMAGNETIC WAVES WITH MAGNETIC HELICITY
C. Chu, General Atomic Company, San Diego, California
- 3E3-4 INVITED PAPER: PLASMA EXPERIMENTS IN SPACE WITH THE WISP/HF INSTRUMENT
H.G. James, Communications Research Centre, Ottawa, Ontario
- 3E5 THERMONUCLEAR DRIVEN FAST MAGNETOSONIC WAVE HEATING IN A TOKAMAK PLASMA
W. Sutton, C. Choi and G. Miley, University of Illinois, Urbana, Illinois
- 3E6 STABILITY ANALYSIS FOR AN ELECTRICALLY EXPLODING CYLINDRICAL SHELL
S.J. Han, A. Andrade and J.H. Brownell, Los Alamos National Laboratory, Los Alamos, New Mexico
- 3E7 MAGNETIC INSULATING WAVES IN PLASMAS
F.S. Felber, R.O. Hunter, Jr., and T. Tajima, Western Research Corporation, San Diego, California
- 3E8 WAVEGUIDE MODES OF A WARM ISOTROPIC LOSSY DRIFTING ELECTRON PLASMA
D. Kalluri, R. Prasad and S. Sataindra, Birla Institute of Technology, Ranchi, India
- 3E9-10 INVITED PAPER: ACTIVE AND PASSIVE METHODS FOR SPACE PLASMA METROLOGY USING ELECTROSTATIC WAVES
L.R.O. Storey, R. Pottelette and J.M. Illiano, Centre national de la recherche scientifique, Orléans, France

Tuesday, May 18, 1982
9:00 A.M., East Lobby, Tory Building

Poster Session 3P - STELLARATORS AND TOKAMAKS

- 3P1 RIGID AXISYMMETRIC STABILITY OF A TOROIDAL PLASMA DURING CURRENT REVERSAL
A. Brizard, INRS-Énergie, Varennes, Québec
- 3P2 MODÈLE POUR LES CORRECTIONS RAPIDES DE LA POSITION HORIZONTALE DU PLASMA DANS LE TOKAMAK DE VARENNES
J. Geoffrion, B.C. Gregory, INRS-Énergie, Varennes, Québec and P. Couture, IREQ, Varennes, Québec
- 3P3 TRANSIENT-FIELD EFFECTS IN THE VARENNES TOKAMAK
J. Kalnavarns, MPB Technologies Inc., Ste-Anne-de-Bellevue, Québec
- 3P4 CONCENTRATION DISTRIBUTION FUNCTION OF DIVERTOR PLASMA FOR THE TOKAMAK FUSION REACTOR
K. Denno, New Jersey Institute of Technology, Newark, New Jersey
- 3P5 MAGNETIC FORCES IN THE S-1 SPHEROMAK
D.I. Brown, Princeton University, Princeton, New Jersey
- 3P6 ON-LINE PREDICTION OF SHAPING PARAMETERS FOR DOUBLET III PLASMAS FROM MAGNETIC SIGNALS
K. Shinya and H. Yokomizo, General Atomic Co., San Diego, California
- 3P7 EQUILIBRIUM AND STABILITY OF CONFIGURATIONS WITH SPATIAL MAGNETIC AXIS
H. Weitzner and M. Mond, New York University, New York, N.Y.
- 3P8 NUMERICAL SIMULATION OF THE BOOTSTRAP CURRENT
J.L. Shohet, University of Wisconsin, Madison, Wisconsin
- 3P9 SIMULATIONS OF ANOMALOUS CURRENT PENETRATION IN A TOKAMAK PLASMA
M. Shoucri, V. Fuchs, Institut de recherche d'Hydro-Québec, Varennes, Québec; I.P. Shkarofsky, MPB Technologies, Ste-Anne-de-Bellevue, Québec and T.W. Johnston, INRS-Énergie, Varennes, Québec
- 3P10 NON-OHMIC CURRENTS IN THE PROTO-CLEO STELLARATOR
J.D. Treffert and J.L. Shohet, University of Wisconsin, Madison, Wisconsin
- 3P11 HEATING AND CONFINEMENT IN THE PROTO-CLEO STELLARATOR
D.J. Hoffman and J.L. Shohet, University of Wisconsin, Madison, Wisconsin

- 3P12 DISCHARGE CLEANING, DIVERTOR PUMPING AND SURFACE STATION IN THE TOKAMAK DE VARENNES
C. Boucher, B.L. Stansfield, B. Terreault and A. Vitali, INRS-Énergie, Université du Québec, Varennes, Québec

Tuesday, May 18, 1982
9:00 A.M., East Lobby, Tory Building

Poster Session 3Q - ULTRAFAST Z-PINCHES

- 3Q1 RADIATION DRIVEN SURFACE ABLATION
C.M. Gilman, P.S. Sincerny, R. Stringfield, G.I. James, and B.D. Harteneck, Physics International Company, San Leandro, California
- 3Q2 MODELING OF THE PAVLOVSKII PLASMA OPENING SWITCH
A.E. Greene, J.H. Brownell and T.A. Oliphant, Los Alamos National Laboratory, Los Alamos, New Mexico
- 3Q3 MEASUREMENT OF ENERGY DISSIPATION IN CONDUCTORS AT VERY HIGH CURRENT DENSITIES
P.S. Sincerny, C. Gilman and G. Dahlbacka, Physics International Company, San Leandro, California
- 3Q4 2-D MHD CALCULATIONS IN THE $r\phi$ PLANE
P.G. Steen, A. Wilson and M. Chapman, S-Cubed, La Jolla, California
- 3Q5 LEXIS: AN INTENSE PULSED PLASMA X-RAY SOURCE
J.C. Riordan, J.S. Pearlman, M. Gersten and R.D. Richardson, Maxwell Laboratories, Inc., San Diego, California
- 3Q6 SIZE MEASUREMENTS OF K-SHELL EMITTING REGIONS IN IMPLoded ARGON PLASMAS
M. Gersten, W. Clark, B. Jackson, J.E. Rauch, R.D. Richardson and G.M. Wilkinson, Maxwell Laboratories, Inc., San Diego, California and D. Duston, Naval Research Laboratory
- 3Q7 A ONE-DIMENSIONAL MHD MODEL FOR THE Z-PINCH OF AN ANNULAR GAS PUFF
D.L. Weiss, T.A. Oliphant, A.E. Greene and J. Brownell, Los Alamos National Laboratory, Los Alamos, New Mexico
- 3Q8 THE ACCELERATION OF THIN-FILM PLASMA LINERS IN A COAXIAL GUN
G.D. Loughheed, R.P. Gupta, M.M. Kekez and J.H. Lau, National Research Council of Canada, Ottawa, Ontario
- 3Q9 IMPLoding THIN-FILM PLASMA LINERS IN A Z-PINCH GEOMETRY
J.H. Lau, R.P. Gupta, M.M. Kekez and G.D. Loughheed, National Research Council of Canada, Ottawa, Ontario
- 3Q10 IMPLoding THIN-FILM LINERS IN A θ -PINCH GEOMETRY
M.M. Kekez, R.P. Gupta, J.H. Lau and G.D. Loughheed, National Research Council of Canada, Ottawa, Ontario

Tuesday, May 18, 1982
9:00 A.M., East Lobby, Tory Building

Poster Session 3R - INTENSE ELECTRON AND ION BEAMS I

- 3R1 THEORETICAL AND EXPERIMENTAL STUDIES OF INDUCTIVE CHARGING INTO A MAGNETIC MIRROR FIELD
G. Barak, A. Fisher, P. Gilad, F. Goldin, H. Ishizuka and N. Rostoker, University of California, Irvine, California
- 3R2 ELECTRON INJECTION AND TRAPPING IN HIGH CURRENT BETATRON
H. Ishizuka, A. Fisher, P. Gilad, K. Kohnen and N. Rostoker, University of California, Irvine, California
- 3R3 CALCULATION OF THE INDUCTANCE OF A BEAM IN A TORUS
S. Slinker, JAYCOR, Alexandria, Virginia; J. Golden and J.A. Pasour, Naval Research Laboratory, Washington, D.C.
- 3R4 ELECTRON-ION RESONANCE INSTABILITIES IN A MODIFIED BETATRON ACCELERATOR
J.M. Finn and W.M. Manheimer, Naval Research Laboratory, Washington, D.C.
- 3R5 THE STABILITY OF RELATIVISTIC LAMINAR FLOW EQUILIBRIA FOR ELECTRONS DRIFTING IN CROSSED FIELDS
J.A. Swegle, Sandia National Laboratories, Albuquerque, New Mexico
- 3R6 MODULATING INTENSE RELATIVISTIC ELECTRON BEAMS
F.S. Felber, B.A. Spivey and T. Tajima, Western Research Corporation, San Diego, California
- 3R7 SCALING OF HIGH-CURRENT ENERGY-STORAGE RINGS
F.S. Felber and R.O. Hunter, Jr., Western Research Corporation, San Diego, California

- 3R8 CHARACTERISTICS OF A PROTON BEAM GENERATED IN AN INDUCTION LINAC
J.D. Ivers, J.A. Nation and I. Roth, Cornell University, Ithaca, New York
- 3R9 PROGRESS TOWARD THE SLOW SPACE CHARGE WAVE COLLECTIVE ION ACCELERATOR
J.D. Ivers, J.A. Nation, S. O'Brien, G. Providakes and V. Serlin, Cornell University, Ithaca, New York
- 3R10 COLLECTIVE ACCELERATION OF LIGHT AND HEAVY IONS
J.T. Cremer, H. Dantsker, W.W. Destler, L.E. Floyd, J.M. Grossmann, R. Kulkarni, I. Mayergoyz, M. Reiser and C.D. Striffler, University of Maryland, College Park, Maryland
- 3R11 FORMATION OF VIRTUAL ANODE OF AN ION BEAM AND GENERATION OF HIGH POWER RF RADIATION
T.J.T. Kwan, L.E. Thode, Los Alamos National Laboratory, Los Alamos, New Mexico
- Tuesday, May 10, 1982
2:00 P.M., Tory "Egg"
- Oral Session 4A - INTENSE ELECTRON AND ION BEAMS III
Session Chairman - S. Humphries, Jr.
- 4A1 PROTON GENERATION AND FOCUSABILITY OF TWO RADIAL ION DIODES TESTED ON PROTO II
D.J. Johnson, E.J. Burns, P.L. Dreike, R.J. Leeper, and S.A. Slutz, Sandia National Laboratories, Albuquerque, New Mexico
- 4A2 DIAGNOSIS OF 3 TW BALLISTICALLY FOCUSED PROTON BEAMS IN A RADIAL ION DIODE
P.L. Dreike, E.J.T. Burns, D.J. Johnson, R.J. Leeper and S.A. Slutz, Sandia National Laboratories, Albuquerque, New Mexico
- 4A3 FOCUSING OF ION BEAMS FROM HIGH-BRIGHTNESS PINCH-REFLEX-DIODES
S.J. Stephanakis, D. Mosher, F.C. Young, Naval Research Laboratory, Washington, D.C. and S.A. Goldstein, JAYCOR, Inc., Alexandria, Virginia
- 4A4 ANODE PLASMA EXPANSION IN PINCH-REFLEX DIODE
D. Colombant and S.A. Goldstein, Naval Research Laboratory, Washington, D.C.
- 4A5-6 INVITED PAPER: REVIEW OF RECENT HIGH POWER ION DIODE EXPERIMENTS
D.J. Johnson, Sandia National Laboratories, Albuquerque, New Mexico
- 4A7 ION BEAM GENERATION, TRANSPORT IN LASER GUIDED PLASMA CHANNEL AND TARGET INTERACTION
S. Miyamoto, T. Ozaki, K. Imasaki, A. Yoshinouchi, F. Ogawa, S. Higaki, S. Nakai and C. Yamanaka, Osaka University, Osaka, Japan
- 4A8 STABILITY CONSTRAINTS ON TRANSPORTED LIGHT-ION BEAMS
P.F. Ottinger, D. Mosher and S.A. Goldstein, Naval Research Laboratory, Washington, D.C.
- 4A9 ION EFFICIENCIES IN AN ANNULAR MAGNETICALLY INSULATED LIGHT ION DIODE
J. Maenchen, D.A. Hammer and J.B. Greenly, Cornell University, Ithaca, New York
- 4A10 EXPERIMENTS ON AND ANALYSES OF ALKALI PLASMA BEAM FOCUSING
D.A. Phelps, D.B. Chang, Occidental Research Corporation, Irvine, California; W.B. Thompson, University of California, San Diego, California and A.F. Fisher, University of California, Irvine, California
- 4A11 DEVELOPMENT OF VACUUM ARC SURFACE ARRAYS FOR DENSE DISTRIBUTED PLASMA PRODUCTION
G.W. McClure, J.A. Webb and C.J. Cianciabella, Sandia National Laboratories, Albuquerque, New Mexico
- 4A12 FLASHOVER SOURCE SIMULATION: CHARGE DEPOSITION IN ANODES BY LEAKAGE ELECTRONS
M.A. Sweeney, G.W. McClure, J.P. Quintenz, J.A. Halbleib, Sandia National Laboratories, Albuquerque, New Mexico
- Tuesday, May 18, 1982
2:00 P.M., Room 256, Mackenzie Building
- Oral Session 4B - PLASMA DIAGNOSTICS
Session Chairman - P. Woskoboinikow
- 4B1-2 INVITED PAPER: NEW LASER SCATTERING EXPERIMENTS ON ASDEX
K.-H. Steuer, H. Röhr, K. Hirsch¹, H. Salzmann¹, P. Bogen², E. Dullni³, R. Dreyfus⁴, S. Goto⁵,
- E. Hintz², H. Langer, D. Rusbüldt², B. Schweer² and the ASDEX Team, Max-Planck-Institut für Plasmaphysik, Garching, F.R.G.
¹IPF Stuttgart
²IPP Jülich
³Ruhr University, Bochum
⁴IBM Watson Research Center
⁵Osaka University
- 4B3 Mo EMISSION MEASUREMENTS ON ALCATOR C
J. Castracane, The Johns Hopkins University
- 4B4 SOFT X-RAY DIAGNOSTICS OF THE ALCATOR C PLASMA
E. Källne and J. Källne, Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts
- 4B5 DIELECTRONIC SATELLITE SPECTRA FOR HELIUM-LIKE ARGON for n = 2, 3, 4
C.P. Bhalla and T.W. Tunnell, Kansas State University, Manhattan, Kansas
- 4B6 STUDY OF PLASMA BY SIMULTANEOUS MULTIPLE DIAGNOSTIC TECHNIQUES
V.V. Agashe, M.H. Ghoranneviss, P.Y. Chaudhari and S.F. Khairnar, University of Poona, Poona, India
- 4B7-8 INVITED PAPER: MULTILAYER MICROSTRUCTURES AS BRAGG REFLECTORS
D.J. Nagel, Naval Research Laboratory, Washington, D.C.
- 4B9 POSSIBLE ADAPTATION OF INTRA-CAVITY ABSORPTION TO PLASMA MAGNETIC FIELD MEASUREMENTS
P.C. Jahoda and P.G. Weber, Los Alamos National Laboratory, Los Alamos, New Mexico and G.O. Brink, State University of New York, Buffalo, New York
- 4B10 SIMULTANEOUS SELF-CALIBRATING FAR INFRARED POLARIMETRY AND INTERFEROMETRY ON THE ZT-40 PLASMA
M.D. Bausman and F.C. Jahoda, Los Alamos National Laboratory, Los Alamos, New Mexico
- 4B11-12 INVITED PAPER: TIME-DELAYED CORRELATIONS IN MULTI-CHORD INTERFEROMETRY FOR DETERMINING PLASMA PROPERTIES
A.R. Jacobson, Los Alamos National Laboratory, Los Alamos, New Mexico
- Tuesday, May 18, 1982
2:00 P.M., Room 251, Mackenzie Building
- Oral Session 4C - PLASMA HEATING AND CURRENT DRIVE
Session Chairman - A. Hirose
- 4C1 HIGH POWER ION CYCLOTRON HEATING EXPERIMENTS ON THE PRINCETON LARGE TORUS
P.L. Colestock, J.C. Hosea, D.Q. Hwang, H.R. Thompson, J.R. Wilson and the PLT Group, Princeton University, Princeton, New Jersey
- 4C2 TORAY - A RAY TRACING CODE FOR THE ANALYSIS OF ELECTRON CYCLOTRON HEATING IN TOROIDAL GEOMETRY
A.H. Kritz, H. Hsuan, Princeton University, Princeton, New Jersey; R.C. Goldfinger and D.B. Batchelor, ORNL
- 4C3-4 INVITED PAPER: RELATIVISTIC ELECTRON BEAM CURRENT-DRIVE FOR STEADY-STATE TOKAMAKS
V.L. Bailey, Pulse Sciences Inc., Oakland, California
- 4C5 SYNCHROTRON RADIATION CURRENT DRIVE FOR A CAT-D TOKAMAK
S. Ho and J. Gilligan, University of Illinois, Urbana, Illinois
- 4C6 PLASMA HEATING IN TORTUR II
A.W. Kolfschoten, H. de Kluiver, H.J.B.M. Brocken, B. de Groot, T. Oyevaar, H.J. van der Meiden, C.J. Barth and E.C. de Bruin, FOM-Instituut voor Plasmafysica, Nieuwegein, The Netherlands
- 4C7 LEAKAGE OF RUNAWAY ELECTRONS FROM TOKAMAKS
K.L. Wong, Princeton University, Princeton, New Jersey
- 4C8-9 INVITED PAPER: GYROMAGNETIC AUTO-RESONANCE
K.S. Golovanivsky, Patrice Lumumba University, Moscow, U.S.S.R.
- Tuesday, May 18, 1982
2:00 P.M., Room 230, Mackenzie Building
- Oral Session 4D - COLLISION PROCESSES AND ARC DISCHARGES
Session Chairman - D.T. Tuma
- 4D1-2 INVITED PAPER: AN OVERVIEW OF ATOMIC COLLISIONS IMPORTANT IN DISCHARGES AND HIGH TEMPERATURE PLASMA
D.H. Crandall, Oak Ridge National Laboratory, Oak Ridge, Tennessee

4D3 INJECTED THERMIONIC ELECTRON SWARM INFLUENCES ON PRIMARY IONIZATION RATES
K.R. Spriggs, South Australian Institute of Technology, Whyalla, Australia

Tuesday, May 18, 1982
2:00 P.M., East Lobby, Tory Building

Poster Session 4P - LASER PLASMA INTERACTIONS

4D4 ON THE VALIDITY OF THE SAHA EQUATION IN MULTITEMPERATURE PLASMAS
E. Richley and D.T. Tuma, Carnegie-Mellon University, Pittsburgh, Pennsylvania

4P1 IONIZATION AND RECOMBINATION EFFECTS IN A CO₂ LASER-PRODUCED CARBON PLASMA
F. Begay and S.R. Goldman, Los Alamos National Laboratory, Los Alamos, New Mexico

4D5 ELECTRICAL AND THERMAL CONDUCTIVITIES OF SF₆ CONTAMINATED BY COPPER VAPOR IN ARC-INTERRUPTION PROCESSES
S. Sugiyama, Fuji Electric Co., Ltd.; Y. Kito and T. Sakuta, Nagoya University, Nagoya, Japan

4P2 EXPERIMENTAL EVIDENCE FOR MULTIPLE BEAM EFFECTS ON HOT ELECTRON TRANSPORT AND DEPOSITION
G.A. Kyrala, M.A. Yates and D. Forslund, Los Alamos National Laboratory, Los Alamos, New Mexico

4D6 TEMPERATURE MEASUREMENTS IN THE ARC BOUNDARY LAYER
N. Brates, M.H. Sanwarwalla and D.M. Benenson, State University of New York, Buffalo, New York

4P3 MEASUREMENTS OF THE ABSORPTION 10- μ m LASER LIGHT AS A FUNCTION OF FOCAL CONDITIONS
D. Bach, G. Kyrala and J. Kephart, Los Alamos National Laboratory, Los Alamos, New Mexico

4D7 TEMPERATURE MEASUREMENT OF DYNAMIC ARGON ARCS IN HIGH SPEED FLOW
T.F. Bernecki, Y.C. Lau and D.M. Benenson, State University of New York, Buffalo, New York

4P4 ELECTRON HEAT TRANSPORT DOWN STEEP TEMPERATURE GRADIENTS
J.P. Matte, INRS-Énergie, Varennes, Québec, J. Vermont, École Polytechnique, Palaiseau, France

4D8 ARC PLASMA DECAY FOLLOWING THE FORCED INTERRUPTION OF DC VACUUM ARCS
D. Bhasavanich, L.S. Frost, J.G. Gorman, C.W. Kimblin, Westinghouse R&D Center, Pittsburgh, Pennsylvania and A.N. Greenwood, Rensselaer Polytechnic Institute

4P5 SPATIAL DEPENDENCE OF BACKSCATTERED AND SIDESCATTERED SPECTRA FROM CO₂ LASER PLASMAS
F. Martin, J. Sabbagh, H. Pépin, P. Lavigne and G. Mitchel, INRS-Énergie, Varennes, Québec

4D9 LOW-PRESSURE-ARC SPOT PATTERN ON A CONICAL CATHODE
H.P. Mercure, M.G. Drouet, R. Decoste, G. Ouellet and P. Noel, Institut de recherche d'Hydro-Québec, Varennes, Québec

4P6 BANDWIDTH EFFECTS IN BRILLOUIN SCATTER: INHOMOGENEOUS PLASMA
G.R. Mitchel, Institut de recherche d'Hydro-Québec, Varennes, Québec; T.W. Johnston and H. Pépin, INRS-Énergie, Varennes, Québec

4D10 ANODE-SPOTS AND THE FLOW OF EROSION PRODUCTS FROM THE CATHODE IN A VACUUM ARC
M.G. Drouet, Institut de recherche d'Hydro-Québec, Varennes, Québec

4P7 THOMSON SCATTERING STUDY OF BRILLOUIN DRIVEN ION WAVES
C.E. Clayton, C. Joshi and P.F. Chen, University of California, Los Angeles, California

4P8 LASER INDUCED BREAKDOWN OF ARGON, METHANE AND NITROGEN AT 0.35 μ m
G. Weyl and D. Rosen, Physical Sciences Inc., Woburn, Massachusetts

Tuesday, May 18, 1982
2:00 P.M., Room 253, Mackenzie Building

Oral Session 4E - ATOMIC PHYSICS, DENSE PLASMAS AND FUSION PRODUCT TRANSPORT
Session Chairman - D.B. Boercker

4P9 STUDY OF HF/DF LASER-SUPPORTED ABSORPTION WAVES BY THE SPECTROSCOPIC METHODS
P.S.P. Wei, Boeing Aerospace Co., Seattle, Washington

4E1 ELECTRON IMPACT IONIZATION OF TRIPLY CHARGED RARE GAS IONS
D.C. Gregory and D.H. Crandall, Oak Ridge National Laboratory, Oak Ridge, Tennessee

4P10 LASER GUIDED DISCHARGE CHANNELS IN ATMOSPHERIC PRESSURE AIR
R.M. Gilgenbach, O.E. Ulrich, L. Horton and J. Meachum, University of Michigan, Ann Arbor, Michigan

4E2 PLASMA SCREENING EFFECTS ON ELECTRON IMPACT EXCITATION OF HYDROGENIC IONS
B.L. Whitten, N.F. Lane, Rice University, Houston, Texas and J.C. Weisheit, Princeton University, Princeton, New Jersey

Tuesday, May 18, 1982
2:00 P.M., East Lobby, Tory Building

Poster Session 4Q - FUSION REACTOR TECHNOLOGY

4E3 ON THE APPLICABILITY OF HEAVY ION STOPPING POWER MODELS
V. Avrigeanu, D. Bucurescu and M. Ivascu, Central Institute of Physics, Bucharest, Romania

4Q1 LITHIUM BLANKET MODULE (LBM) FOR NEUTRONICS AND BREEDING TESTS IN THE TFTR
LBM Design Team, Princeton University, Princeton, New Jersey; General Atomic Co. and EG&G Idaho Inc.

4E4 THOMAS-FERMI THEORY OF COLLISIONS OF IONS IN PLASMAS
R.M. More, Lawrence Livermore National Laboratory, Livermore, California

4Q2 EXPERIMENTS AND DATA NEEDS IMPORTANT FOR THE COMMERCIALIZATION OF ICF
D.A. Sink, L. Green, H.R. Howland and E.W. Suvov, Westinghouse Fusion Programs, Pittsburgh, Pennsylvania

4E5 COMPUTER CALCULATIONS OF GAS EQUATIONS OF STATE AND OPACITIES FOR USE IN ICF TARGET CHAMBER DESIGN
R.R. Peterson and G.A. Moses, University of Wisconsin, Madison, Wisconsin

4Q3 COMPARISON OF BERYLLIUM AND DEPLETED-URANIUM MULTIPLIERS FOR LIMITED-COVERAGE FUSION REACTOR BLANKETS
B.J. Micklich and D.L. Jassby, Princeton University, Princeton, New Jersey

4E6 PLASMA PSEUDOPOTENTIALS
F.J. Rogers, Lawrence Livermore National Laboratory, Livermore, California

4Q4 DESIGN OF A FIRST WALL/BLANKET FOR A NEUTRON LEAN FUSION POWER REACTOR
R.N. Cherdack, J. Wysocki, J. Celnik and J. Riddington, Burns and Roe, Oradell, New Jersey

4E7 ELECTRON COLLISION FREQUENCY AND THE ELECTRICAL CONDUCTIVITY OF DENSE PLASMAS
D.B. Boercker, Lawrence Livermore National Laboratory, Livermore, California

4Q5 RESISTIVE-MAGNET TOKAMAK TEST REACTORS FOR FUSION-NEUTRON APPLICATIONS DEVELOPMENT
D.L. Jassby and L.D. Stewart, Princeton University, Princeton, New Jersey

4E8 NEUTRON EMISSION BY PLASMA CAVITONS
R.T. Schneider, RTS Labs, Gainesville, Florida and P.H. Handel, RTS Labs and University of Missouri, St. Louis, Missouri

4Q6 D-D and D-He³ TARGET CONCEPTS
G.R. Magelssen, Los Alamos National Laboratory, Los Alamos, New Mexico and G.H. Miley, University of Illinois, Urbana, Illinois

4E9 ANALYTIC TREATMENTS OF FAST ION SLOWING IN DENSE FUSION PLASMAS
C.K. Choi, University of Illinois, Urbana, Illinois

4E10 APPLICATION OF UNIFIED SLOWING DOWN THEORY TO THE AFLINT ICF TARGET
D. Welch, C. Choi and G.H. Miley, University of Illinois, Urbana, Illinois

Tuesday, May 18, 1982
2:00 P.M., East Lobby, Tory Building

Poster Session 4R - COMPACT TOROIDS AND REVERSED FIELD PINCHES II

4E11 EFFECTS OF THE DISTORTION OF THE PLASMA ION DISTRIBUTION BY COULOMB SLOWING DOWN OF FUSION PRODUCTS
J. Galambos, J. Gilligan and G.H. Miley, University of Illinois, Urbana, Illinois

4R1 FRC EXPERIMENTS ON FRX-C
W.T. Armstrong, R.R. Bartsch, R.E. Chrien, J.C. Cochrane, R.W. Kewish, R.K. Linford, J. Lipson, K.F. McKenna, D.J. Rej, E.G. Sherwood, R.E. Siemon and M. Tuszewski, Los Alamos National Laboratory, Los Alamos, New Mexico

4E12 ROLE OF LARGE ENERGY TRANSFER COULOMB COLLISIONS IN FUSION PRODUCT SLOWING DOWN
P. Stroud and J. Gilligan, University of Illinois, Urbana, Illinois

- 4R2 ASYMMETRIC RECONNECTION IN THE FORMATION OF FRCs
W.T. Armstrong, Los Alamos National Laboratory, Los Alamos, New Mexico; R.D. Milroy, Mathematical Sciences Northwest and E. Seviliano, University of Washington
- 4R3 ONE-DIMENSIONAL FOKKER-PLANCK KINETIC APPROACH FOR STEADY-STATE OPERATION OF A FIELD-REVERSED THETA PINCH
M.-Y. Hsiao and G.H. Miley, University of Illinois, Urbana, Illinois
- 4R4 PROGRESS TOWARDS GENERATION OF A COMPACT TOROID WITH TWO COUNTERSTREAMING ROTATING RELATIVISTIC ELECTRON BEAMS
J.D. Sethian, K.A. Gerber, A.W. De Silva¹ and A.E. Robson, Naval Research Laboratory, Washington, D.C.
¹Sachs/Freeman Associates, Inc.
- 4R5 SATURATION OF TILTING OF PARTICLE RINGS
R.V. Lovelace and C. Ruchti, Cornell University, Ithaca, New York
- 4R6 OBSERVATIONS OF LONG E-LAYERS IN RECE-CHRISTA
M.R. Parker, R. Jayakumar, D. Taggart, H.J. Hopman and H.H. Fleischmann, Cornell University, Ithaca, New York
- 4R7 BETATRON ACCELERATION OF STRONG ELECTRON RINGS IN RECE-CHRISTA
D. Taggart, M.R. Parker, R. Jayakumar, H.J. Hopman and H.H. Fleischmann, Cornell University, Ithaca, New York
- 4R8 PULSED-MIRROR TRAPPING OF ION RINGS ON LONGSHOT
J.B. Greenly, G.D. Rondeau, D.A. Hammer and R.N. Sudan, Cornell University, Ithaca, New York
- Wednesday, May 19, 1982
9:00 A.M., Tory "Egg"

Oral Session 5A - RAILGUNS AND MASS ACCELERATORS
Session Chairman - W. Kerslake

- 5A1-2 INVITED PAPER: ARC DYNAMICS IN THE RAIL GUN
J.D. Powell, Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland
- 5A3 PLASMA-ARMATURE RAILGUNS: THEORY AND EXPERIMENT
Y.-C. Thio, Defence Science and Technology Organization, Melbourne, Australia
- 5A4 A SIMPLIFIED MODEL FOR ARC PLASMA ANALYSIS IN ELECTROMAGNETIC LAUNCHER SYSTEM
J.L. Wu, D.A. Fikse and D.W. Scherbarth, Westinghouse R&D Center, Pittsburgh, Pennsylvania
- 5A5 DESIGN AND PERFORMANCE OF A CAPACITOR POWERED RAIL GUN
J.E. Shrader and M.D. Bjorkman, Boeing Aerospace Co., Seattle, Washington
- 5A6 PLASMA BEHAVIOR IN ARC DRIVEN RAILGUNS
R.S. Hawke, A.L. Brooks, Lawrence Livermore National Laboratory, Livermore, California; C.M. Fowler and D.R. Peterson, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5A7 CONCEPTS TO MINIMIZE LOSSES OF ARC ARMATURES USED IN RAIL GUNS
J.H. Cuadros, and C. Rathman, General Dynamics, Pomona, California
- 5A8 CURRENT DISTRIBUTION AND INDUCTANCE CALCULATIONS FOR RAIL-GUN CONDUCTORS
J.F. Kerrisk, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5A9 CURRENT AND THERMAL DIFFUSION IN RAIL-GUN CONDUCTORS
J.F. Kerrisk, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5A10 ELECTROMAGNETIC PROJECTILE ACCELERATION UTILIZING DISTRIBUTED ENERGY SOURCES
J.V. Parker, Los[®] Alamos National Laboratory, Los Alamos, New Mexico
- 5A11 COMPUTATIONAL MODEL FOR MAGNETIC INDUCTION MASS ACCELERATOR
T.J. Burgess, Sandia National Laboratories, Albuquerque, New Mexico
- 5A12 THE MAGNETIC BOOSTER TARGET, PROSPECT FOR A LOW-COST NEAR-TERM ICF DRIVER
F. Winterberg, University of Nevada, Reno, Nevada

Wednesday, May 19, 1982
9:00 A.M., Room 256, Mackenzie Building

Oral Session 5B - PLASMA FOCUS
Session Chairman - C.M. Fowler

- 5B1 INTERACTION EXPERIMENTS BETWEEN AN AUXILIARY DISCHARGE AND A PLASMA FOCUS
G.F. Knapp, M.S. Pronko, G.M. Molen and H.C. Kirbie, Old Dominion University, Norfolk, Virginia

- 5B2 EXTERIOR PLASMA SHEATH INTERACTIONS IN A PLASMA FOCUS
B.L. Freeman, R.S. Caird, D.J. Erickson and C.M. Fowler, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5B3 TWO-DIMENSIONAL MODELING OF AN EXPLOSIVE GENERATOR DRIVEN DENSE PLASMA FOCUS AND RELATED GEOMETRIES
I. Lindemuth and B. Freeman, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5B4 AN ULTRA-HIGH VACUUM DENSE PLASMA FOCUS DEVICE
R.A. Hill, Sandia National Laboratories, Albuquerque, New Mexico
- 5B5 GENERATION OF ENERGETIC PARTICLES IN DENSE PLASMA FOCUS
M. Yokoyama, Y. Kitagawa, Y. Yamada, M. Okada, Y. Yamamoto, T. Hori and C. Yamanaka, Osaka University, Osaka, Japan
- 5B6 INVESTIGATION OF PLASMA SHEATH STRUCTURE IN RUN-DOWN PHASE IN A PLASMA FOCUS DEVICE
I. Ursu, M. Ivascu, I.I. Popescu, C. Dumitrescu, T. Ionescu-Bujor, V. Zambreanu and V. Zoita, Central Institute of Physics, Bucharest, Romania
- 5B7 A TIME RESOLVING METHOD FOR DETERMINING THE ENERGY SPECTRUM OF NEUTRONS EMITTED BY A PLASMA FOCUS DEVICE
M. Vlad, Institute of Physics and Technology of Radiation Devices, Bucharest, Romania
- 5B8 THOMSON SPECTROMETER AND NUCLEAR TRACK ANALYSIS OF IONS PRODUCED BY A PULSE POWERED PLASMA FOCUS DEVICE
M.J. Rhee and A. Shpilman, University of Maryland, College Park, Maryland
- 5B9 BEAM PARTICLE MEASUREMENTS AND NEUTRON PRODUCTION IN A 6-12 kJ PLASMA FOCUS
J. Mandrekas, F. Venneri and G. Gerdin, University of Illinois, Urbana, Illinois

Wednesday, May 19, 1982
9:00 A.M., Room 251, Mackenzie Building

Oral Session 5C - THERMIONICS AND PLASMA DIODES I
Session Chairman - P.E. Oettinger

- 5C1 A POSSIBLE SCHEME FOR REDUCING PLASMA ARC DROP IN THERMIONIC CONVERTERS
S.H. Lam and G.L. Main, Princeton University, Princeton, New Jersey
- 5C2 THE EFFECT OF STOICHIOMETRY ON THE ELECTRON EMISSION AND VOLATILITY OF VARIOUS SINGLE CRYSTAL RARE EARTH HEXABORIDE COMPOUNDS
L.W. Swanson and P.R. Davis, Oregon Graduate Center, Beaverton, Oregon
- 5C3 CESIUM ADSORPTION/DESORPTION ON "SUBLIMED MOLY-OXIDE" SURFACES
P.R. Davis and L.W. Swanson, Oregon Graduate Center, Beaverton, Oregon
- 5C4 THERMIONIC EMISSION OF POSITIVE IONS FROM ZEOLITES
J. Matossian and M. Seidl, Stevens Institute of Technology, Hoboken, New Jersey
- 5C5 METAL BORIDES IN THERMIONIC ENERGY CONVERSION (TEC)
D.L. Jacobson and J.F. Morris, Arizona State University, Tempe, Arizona
- 5C6 WORK FUNCTION MEASUREMENTS OF OXYGENATED SURFACES IN A LOW CESIUM PRESSURE DIODE
J.-L. Desplat, Rasor Associates, Inc., Sunnyvale, California
- 5C7-8 INVITED PAPER: ENERGY TRANSFER AND IONIZATION IN ALKALI METAL VAPORS
W.C. Stwalley, University of Iowa, Iowa City, Iowa

Wednesday, May 19, 1982
9:00 A.M., Room 230, Mackenzie Building

Oral Session 5D - MICROWAVE DISCHARGES, ELECTRON-BEAM CONTROLLED DISCHARGES AND SPARK FORMATION
Session Chairman - G.L. Rogoff

- 5D1 IMPORTANCE OF INELASTIC ENERGY TRANSFER IN A MICROWAVE DISCHARGE IN H₂
T.J. Morin and M.C. Hawley, Michigan State University, East Lansing, Michigan
- 5D2 PROPERTIES OF STEADY STATE, HIGH PRESSURE MICROWAVE GENERATED ARC DISCHARGES IN ARGON GAS
J. Rogers and J. Asmussen, Jr., Michigan State University, East Lansing, Michigan

- 5D3 THE BEHAVIOR OF STEADY-STATE, LOW PRESSURE MICROWAVE GENERATED PLASMAS
J. Rogers and J. Asmussen, Jr., Michigan State University, East Lansing, Michigan
- 5D4 A COMPARISON BETWEEN THEORETICAL AND EXPERIMENTAL INVESTIGATIONS OF AN OXYGEN MICROWAVE DISCHARGE
M. Brake, J. Hinkle and R. Kerber, Michigan State University, East Lansing, Michigan
- 5D5-6 INVITED PAPER: REVIEW OF THE PROPERTIES AND APPLICATIONS OF SURFACE WAVE PRODUCED PLASMAS
M. Moisan, Université de Montréal, Montréal, Québec
- 5D7 SWITCH-OFF CHARACTERISTICS OF E-BEAM IONIZED DISCHARGES
P. Bletzinger, Air Force Wright Aeronautical Laboratories, Wright-Patterson AFB, Ohio
- 5D8 DISTRIBUTION OF ELECTRIC FIELD IN LARGE E-BEAM SUSTAINED CO₂ LASERS
W. Leland and M. Kircher, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5D9 TRANSIENT PLASMA CONDUCTIVITY IN SHORT PULSE DISCHARGES
W.W. Byszewski, M.J. Enright and J.M. Proud, GTE Laboratories, Inc., Waltham, Massachusetts
- 5D10 THE EFFECT OF DIELECTRIC SURFACES ON THE BREAKDOWN OF GAS SPARK GAPS
S.T. Pai, J.P. Marton and W.J. Ip, Opto-Electronics, Oakville, Ontario
- 5D11 THE pd RANGE FOR PRE-BREAKDOWN SECONDARY IONIZATION IN NITROGEN
K.R. Spriggs, South Australian Institute of Technology, Whyalla, Australia
- 5D12 RÉACTIONS DE PRODUITS DE DÉCHARGES MICROONDES AVEC DES SOLIDES
S. De Jaegere, M. Willems, C. Vinckier et P. Van Der Hoogerstraete, Katholieke Universiteit Leuven, Herverlee, Belgique

Wednesday, May 19, 1982
9:00 A.M., Room 253, Mackenzie Building

Oral Session 5E - COMPUTER METHODS
Session Chairman - A. Drobot

- 5E1 A TECHNIQUE FOR GRID NOISE REDUCTION IN E-M PARTICLE SIMULATIONS
M. Chapman and E.M. Waisman, S-Cubed, La Jolla, California
- 5E2 STRUCTURE AND INITIAL APPLICATIONS OF THE THREE-DIMENSIONAL PARTICLE-IN-CELL BEAM SIMULATION CODE IVORY
B.B. Godfrey and M.M. Campbell, Mission Research Corporation, Albuquerque, New Mexico
- 5E3-4 INVITED PAPER: IMPLICIT LARGE TIME STEP KINETIC SIMULATION OF PLASMAS
A.B. Langdon, Lawrence Livermore National Laboratory, Livermore, California
- 5E5 SIMMI - A LINEARIZED PARTICLE SIMULATION CODE
G. Joyce and M. Lampe, U.S. Naval Research Laboratory, Washington, D.C.
- 5E6 FLUID MODEL OF RELATIVISTIC PARTICLE BEAMS
H.L. Buchanan and E.P. Lee, Lawrence Livermore National Laboratory, Livermore, California
- 5E7 IONIZATION PACKAGE FOR PLASMA SIMULATION
J.N. McMullin and C.E. Capjack, University of Alberta, Edmonton, Alberta
- 5E8 AC AND DC 3-D MAGNETIC FIELD CALCULATION BY FINITE ELEMENT METHOD
R.P. Gupta, J.H. Lau and P. Savic, National Research Council of Canada, Ottawa, Ontario
- 5E9 A COMPUTER CODE TO CALCULATE ELECTRON TRAJECTORIES IN CYLINDRICALLY SYMMETRIC MAGNETIC FIELDS
J.S. Ladish, Los Alamos National Laboratory, Los Alamos, New Mexico

Wednesday, May 19, 1982
9:00 A.M., East Lobby, Tory Building

Poster Session 5P - NEUTRAL BEAMS FOR FUSION RESEARCH

- 5P1 DIGITAL COMPUTER SIMULATION OF ION BEAMS
J.E. Boers, Sandia National Laboratories, Albuquerque, New Mexico
- 5P2 INCREASING THE EFFICIENCY OF A MULTICUSP ION SOURCE
K.N. Leung and K.W. Ehlers, University of California, Berkeley, California

- 5P3 LBL SELF-EXTRACTION NEGATIVE ION SOURCE
K.W. Ehlers and K.N. Leung, University of California, Berkeley, California
- 5P4 WALL MATERIAL AND TEMPERATURE EFFECTS ON NEGATIVE ION PRODUCTION IN A HYDROGEN PLASMA
W.G. Graham and J. Fryar, The New University of Ulster, Coleraine, Northern Ireland
- 5P5 ACCEL VOLTAGE SWITCHING BY USING THYRISTORS AND ITS APPLICATION TO ION SOURCE
H. Nihei, J. Morikawa, N. Inoue, K. Ota, S. Ishida and T. Uchida, University of Tokyo, Tokyo, Japan
- 5P6 DESIGN OF LOW ABERRATION INJECTORS FOR THE MFTF-B HIGH ENERGY PUMP BEAM INJECTORS
J.H. Wheelton, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 5P7 SPECTROSCOPIC AND DRIFT DUCT DIAGNOSTICS FOR THE DOUBLET III NEUTRAL BEAM INJECTORS
J.H. Kamperschroer, D.B. McColl, A.P. Colleraine, J. Fasolo, J. Kim, T. McMahon, J.F. Tooker and J.R. Treglio, General Atomic Company, San Diego, California
- 5P8 CALORIMETRY ON THE DOUBLET III NEUTRAL BEAM INJECTORS
D.B. McColl, A.P. Colleraine, J. Fasolo, J.H. Kamperschroer, J. Kim, T. McMahon, R.L. Silagi, J.F. Tooker and J.R. Treglio, General Atomic Company, San Diego, California

Wednesday, May 19, 1982
9:00 A.M., East Lobby, Tory Building

Poster Session 5Q - PLASMA HEATING AND CURRENT DRIVE

- 5Q1 ICRF WAVE PROPAGATION AND HEATING IN THE ALCATOR TOKAMAKS
D.T. Blackfield and B.D. Blackwell, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 5Q2 MEASUREMENTS OF THE LEFT AND RIGHT HAND ELECTRIC FIELD COMPONENTS OF THE FAST ALFVEN WAVE IN THE TEXAS TECH TOKAMAK
P.D. Coleman, M.O. Hagler, M. Kristiansen, Texas Tech University, Lubbock, Texas
- 5Q3 JOULE RF HEATING OF METALLIC PARTICLES
W.A. Janos, Huntington Beach, California
- 5Q4 ALFVEN WAVE HEATING EXPERIMENTS IN TOKAPOLE II
F.D. Witherspoon, S.C. Prager and J.C. Sprott, University of Wisconsin, Madison, Wisconsin
- 5Q5 SIMULATION OF ICRF HEATING SCENARIOS IN REACTOR TOKAMAKS
T.K. Mau and R.W. Conn, University of California, Los Angeles, California
- 5Q6 ANALYSIS OF HEATING EXPERIMENTS, PRESENT AND PLANNED, IN THE ION CYCLOTRON RANGE OF FREQUENCIES ON EBT
T.L. Owens, J.H. Mullen, McDonnell Douglas Astronautics Company; F.W. Baity, W.A. Davis and O.C. Eldridge, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 5Q7 ELECTRON CYCLOTRON RESONANCE HEATING IN TANDEM MIRROR PLASMAS WITH LOSS CONE DISTRIBUTION FUNCTIONS
N.T. Lam, J.E. Scharer and K. Audenaerde, University of Wisconsin, Madison, Wisconsin
- 5Q8 ION CYCLOTRON FREQUENCY RANGE COUPLING AND HEATING IN LARGE TOKAMAK PLASMAS
H. Romero, R. Sund and J.E. Scharer, University of Wisconsin, Madison, Wisconsin
- 5Q9 APPLICATION OF QUALITATIVE TRANSFORMATION EFFECT ACCORDING TO THE THERMODYNAMICS OF ACCUMULATION PROCESSES REGULARITY IN SOLID PARTICLES PLASMA HEATING PHENOMENA
M.R. Mehandjiev, Sofia, Bulgaria
- 5Q10 THE REXIMPLO SPHERICAL PINCH: ANALYSIS OF THE NEUTRON PRODUCING MECHANISM
E. Panarella and V. Guty, National Research Council of Canada, Ottawa, Ontario
- 5Q11 A LARGE-BETA, NEUTRAL-BEAM HEATING, STEADY-STATE TOKAMAK DEVICE
B.M. Ma, Iowa State University, Ames, Iowa
- 5Q12 STEADY HIGH-Q OPERATION OF TOKAMAK REACTORS
V. Fuchs and M. Shoucri, IREQ, Varennes, Québec and L. Harten and A. Bers, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 5Q13 DEVELOPMENT OF FAST TOKAMAK DATA ANALYSIS CODE FOR STUDYING NON-CIRCULAR BEAM HEATED HIGH- β PLASMAS
M. Otsuka, M. Nagami, T. Matsuda and the JAERI Team, General Atomic Company, San Diego, California

- 5Q14 RELATIVISTIC ELECTRON BEAM CURRENT-DRIVE IN TOKAMAKS
V. Bailey, B. Ecker, H. Helava, G.A. Proulx, Physics International Company, San Leandro, California and R.J. Taylor, University of California, Los Angeles, California
- 5Q15 HIGH POWER ION CYCLOTRON HEATING ON THE WISCONSIN LEVITATED OCTUPOLE
C.M. Fortgang, R.N. Dexter, J.C. Sprott, E.J. Strait and J.C. Twichell, University of Wisconsin, Madison, Wisconsin
- Wednesday, May 19, 1982
9:00 A.M., East Lobby, Tory Building
- Poster Session 5R - INTENSE ELECTRON AND ION BEAMS II
- 5R1 THE EFFECTS OF CURRENT FLOW ON CATHODE PLASMA FORMATION IN REB DIODES
D.D. Hinshelwood, Massachusetts Institute of Technology, Cambridge, Massachusetts
- 5R2 OBSERVATION OF THE ION TRANSVERSE VELOCITIES IN THE ACCELERATION GAP OF A MAGNETICALLY INSULATED DIODE
R. Pal, Y. Maron, D.A. Hammer, Cornell University, Ithaca, New York
- 5R3 LOCAL ION FLUX AND ION DIRECTION OF MOTION AND THEIR CORRELATION WITH INSTABILITIES IN THE ELECTRON FLOW IN A MAGNETICALLY INSULATED DIODE
Y. Maron, D.A. Hammer, R.N. Sudan, Cornell University, Ithaca, New York
- 5R4 TIME-DEPENDENT BRIGHTNESS MEASUREMENTS OF AN INTENSE ION BEAM
J.M. Neri, D.A. Hammer and J.B. Greenly, Cornell University, Ithaca, New York
- 5R5 APPLIED B_0 DIODE EXPERIMENT ON THE HYDRAMITE ACCELERATOR
T.R. Lockner, Sandia National Laboratories, Albuquerque, New Mexico; S. Humphries, Jr., University of New Mexico; D. Kraybill and E. Brass, Lawrence Livermore National Laboratory
- 5R6 TIME-DEPENDENT INVESTIGATION OF ION BEAM QUALITY IN THE "APPLIED B_0 " MAGNETICALLY INSULATED ION DIODE
T.J. Renk, D.A. Hammer, R.N. Sudan, Cornell University, Ithaca, New York
- 5R7 THE EFFECTS OF NON-SPHERICALLY SYMMETRIC ION BEAM DEPOSITION ON SPHERICALLY SYMMETRIC TARGETS
W.P. Gula, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5R8 ENERGY TRANSFER FROM A VERY INTENSE ELECTRON BEAM TO A DENSE PLASMA
H.A. Davis, C.A. Ekdahl¹, M.D. Montgomery and R.L. Sheffield, Los Alamos National Laboratory, Los Alamos, New Mexico
¹Mission Research Corp., Albuquerque, New Mexico
- 5R9 MODEL FOR INITIALLY NEUTRAL HYDROGEN GAS IONIZATION BY THE TWO-STREAM INSTABILITY
L.E. Thode and D.S. Lemons, Los Alamos National Laboratory, Los Alamos, New Mexico
- 5R10 CONTRIBUTION OF PRIMARY IONIZATION TO HEATING OF THE SECONDARY PLASMA FORMED IN NEUTRAL GAS BY A PROPAGATING HIGH POWER ELECTRON BEAM
J.-M. Dolique and A. Richard, Université de Grenoble, Grenoble, France
- 5R11 INTENSE RELATIVISTIC ELECTRON BEAM PROPAGATION EXPERIMENTS IN LOW PRESSURE GASES
C.A. Ekdahl, Mission Research Corporation, Albuquerque, New Mexico and W.H. Bostick, Air Force Weapons Laboratory
- 5R12 MONOPOLE/DIPOLE SIMULATION OF AN ELECTRON BEAM PROPAGATING IN A GAS
F.W. Chambers and J.A. Masamitsu, Lawrence Livermore National Laboratory, Livermore, California
- Wednesday, May 19, 1982
2:00 P.M., Room 256, Mackenzie Building
- Oral Session 6B - DENSE PLASMA DIAGNOSTICS
Session Chairman - K. Riepe
- 6B1 A HIGH RESOLUTION, HIGH INTENSITY PULSED X-RADIOGRAPHIC SYSTEM
R. Stringfield, H. Sze, C. Gilman, B. Ecker, H. Helava and G. Dahlbacka, Physics International Company, San Leandro, California
- 6B2 DIAGNOSTICS OF THE NOVA PLASMA SHUTTER
L.P. Bradley and A.C. Mitchell, Lawrence Livermore National Laboratory, Livermore, California
- 6B3-4 INVITED PAPER: TOPICS IN HIGH DENSITY PLASMA DIAGNOSTICS
B.H. Ripin, Naval Research Laboratory, Washington, D.C.
- 6B5 TIME RESOLVED SPECTROSCOPY USING GATED MICRO-CHANNEL-PLATES (MCP)
R.E. Stewart, D.D. Dietrich, R.J. Fortner, R.E. Marrs, D. Price, Lawrence Livermore National Laboratory, Livermore, California and M. Levine, Lawrence Berkeley Laboratory
- 6B6 AN ELECTRON IMAGING SPECTROMETER FOR INVESTIGATING HOT ELECTRON PRODUCTION IN LASER PRODUCED PLASMAS
J.S. Ladish and R. Lenz, Los Alamos National Laboratory, Los Alamos, New Mexico
- 6B7 RESOLUTION IN k SPACE IN THOMSON SCATTERING
H.A. Baldis, C.J. Walsh and R. Benesch, National Research Council of Canada, Ottawa, Ontario
- 6B8 A SIMPLE CURRENT VIEWING RESISTOR (SHUNT) FOR CURRENT MEASUREMENT IN MAGNETICALLY INSULATED VACUUM FEEDS
M.S. Di Capua, P.S. Sincerny, G.I. James and C.M. Gilman, Physics International Company, San Leandro, California
- 6B9 MODELED HYDRODYNAMIC EQUATIONS FOR A DENSE TWO COMPONENT PLASMA
S.J. Yakura and A.Z. Ackasu, University of Michigan, Ann Arbor, Michigan
- Wednesday, May 19, 1982
2:00 P.M., Room 251, Mackenzie Building
- Oral Session 6C - THERMIONICS AND PLASMA DIODES II
Session Chairman - G.L. Hatch
- 6C1-2 INVITED PAPER: ENERGY CONVERSION CHALLENGES FOR SPACE POWER
L.H. Caveny, A.K. Hyder and S.G. Wax, Air Force Office of Scientific Research, Washington, D.C.
- 6C3 THERMIONIC ENERGY CONVERSION (TEC) AND SPACE NUCLEAR REACTORS (SNR'S)
J.F. Morris, Arizona State University, Tempe, Arizona
- 6C4 ANALYTICAL AND EXPERIMENTAL STUDY OF A DIVERGENT GEOMETRY THERMIONIC CONVERTER
G.L. Hatch and J.B. McVey, Rasor Associates, Sunnyvale, California
- 6C5 THERMIONIC LASER CONCEPTS
E.J. Britt, Rasor Associates, Sunnyvale, California and J.L. Lawless, Carnegie-Mellon University, Pittsburgh, Pennsylvania
- 6C6 HIGH TEMPERATURE THERMIONIC DIODE SWITCH
G.L. Hatch, Rasor Associates, Sunnyvale, California
- 6C7 INVESTIGATIONS OF THERMIONIC CONVERTER PERFORMANCE IMPROVEMENTS
F.N. Huffman, M. Saunders, L.R. Danielson, D.B. Goodale and P.E. Oettinger, Thermo Electron Corporation, Waltham, Massachusetts
- 6C8 LASER-INDUCED THERMIONIC ELECTRON EMISSION FROM CESIATED CATHODES
C.L. Lee and P.E. Oettinger, Thermo Electron Corporation, Waltham, Massachusetts
- Wednesday, May 19, 1982
2:00 P.M., Room 253, Mackenzie Building
- Oral Session 6E - NEUTRAL BEAMS FOR FUSION RESEARCH
Session Chairman - J.H. Fink
- 6E1 EXPERIMENTS WITH HCD PLASMA INJECTION INTO NEGATIVE H-SOURCES
A.I. Hershcovitch, J.G. Alessi, V.J. Kovarik, R.A. Larson, R.B. McKenzie-Wilson, K. Prelec and Th. Sluyters, Brookhaven National Laboratory, Upton, New York
- 6E2 PLASMA GENERATED NEUTRON SOURCE
T.W. Rybka, Christian Heritage College, San Diego, California
- 6E3 ION DUMP BEAM RASTER SCAN EXPERIMENTS
W.K. Dagenhart, G.C. Barber and N.S. Ponte, Oak Ridge National Laboratory, Oak Ridge, Tennessee

6E4 SCALING UP THE EXTRACTED CURRENT DENSITY FROM A SURFACE
CONVERSION SOURCE OF NEGATIVE IONS
J.H. Fink, Lawrence Livermore National Laboratory,
Livermore, California

6E5 LARGE D⁻ ION SOURCE FOR ENERGETIC NEUTRAL BEAM
M. Delaunay, R. Geller, C. Jacquot, P. Ludwig,
J.C. Rocco, P. Sermet and F. Zadworny, Assoc.
EURATOM C.E.A.; J. Bergström, J. Hellblöm, R. Pauli
and H. Wilhelmsson, Assoc. EUR.SWEDEN

Wednesday, May 19, 1982
2:00 P.M., East Lobby, Tory Building
Poster Session 6P - GENERAL POSTER SESSION

6P1 UNIPOLAR CURRENTS AND ELECTROSTATIC PROBE CHARACTERISTICS
IN A MERCURY-ARGON PLASMA
G.L. Rogoff, J.F. Lowry and R.I. Pinsker, Westinghouse
Research and Development Center, Pittsburgh,
Pennsylvania

6P2 DATA ACQUISITION AND COMPUTER CONTROL SYSTEM FOR A MEDIUM
SIZED TOKAMAK PROJECT
D. Dube, J.M. Larsen¹, E.S. Robins, C. Strong and
F.G.R. Warren, MPB Technologies Inc., Ste-Anne-de-
Bellevue, Québec
¹INRS, Varennes, Québec

6P3 COMPUTER DATA ACQUISITION SYSTEM/MACHINE CONTROL NETWORK
FOR THE WISCONSIN IMS DEVICE
B.D. Cutting, F.S.B. Anderson and J.L. Shohet,
University of Wisconsin, Madison, Wisconsin

6P4 RAIL-GUN TESTING
C.M. Fowler, D.R. Peterson, C.E. Cummings,
J.F. Kerrisk, Los Alamos National Laboratory, Los
Alamos, New Mexico; R.S. Hawke, A.L. Brooks, Lawrence
Livermore National Laboratory

6P5 <<L'ARTSCIENCE>>: EXACT OBJECT METHODOLOGY
S.L. Weinberg, Academy of Artscience, Berkeley,
California

Wednesday, May 19, 1982
2:00 P.M., East Lobby, Tory Building

Poster Session 6Q - GASEOUS ELECTRONICS & GAS DISCHARGE TECHNOLOGY

6Q1 PREIONIZATION OF A HIGH PRESSURE GAS LASER DISCHARGE BY A
SHORT X-RAY PULSE
H. Shields and A.J. Alcock, National Research Council
of Canada, Ottawa, Ontario

6Q2 ELECTRON BEAM ENERGY BRANCHING IN DRY AIR
G. Fournier, J. Bonnett, D. David and D. Pigache,
ONERA, Châtillon, France

6Q3 ELECTRON-BEAM CONTROLLED DIFFUSE DISCHARGES
V.E. Scherrer, R.J. Comisso¹, R.F. Fernsler¹,
L. Miles², and I.M. Vitkovitsky, Naval Research
Laboratory, Washington, D.C.
¹JAYCOR, Alexandria, Virginia
²Naval Surface Weapons Center, White Oak, Maryland

6Q4 EXPERIMENTS WITH PLASMA SWITCHING
R.J. Comisso, JAYCOR, Inc., Alexandria, Virginia and
I.M. Vitkovitsky, Naval Research Laboratory,
Washington, D.C.

6Q5 LASER TRIGGERING OF UNIFORM FIELD ELECTRODE RAIL-GAPS
R.S. Taylor and K.E. Leopold, National Research Council
of Canada, Ottawa, Ontario

6Q6 EXPANSION IN VACUUM OF THE CATHODIC ARC PLASMA IN THE
PRESENCE OF A MAGNETIC FIELD
J.-L. Meunier, and M.G. Drouet, Institut de recherche
d'Hydro-Québec, Varennes, Québec

6Q7 TIME-RESOLVED STUDIES OF ANODE EROSION BY HIGH-CURRENT-
DENSITY ARCS OF MILLISECOND DURATION
R.B. Piejak, J. Lavery¹, H. Wilhelmson² and
S.R. Robertson, GTE Laboratories Incorporated, Waltham,
Massachusetts
¹CDI Corporation, Needham, Massachusetts
²GTE Products Corp., S.S.D., Westboro, Massachusetts

6Q8 SOME CHARACTERISTICS OF THE CURRENT REVERSED SPARK
DISCHARGE: PART 1
M.M. Kekez and P. Savic, National Research Council of
Canada, Ottawa, Ontario

6Q9 SOME CHARACTERISTICS OF THE CURRENT REVERSED SPARK
DISCHARGE: PART 2
M.M. Kekez and P. Savic, National Research Council of
Canada, Ottawa, Ontario

6Q10 GENERALIZED RADIATION MODEL FOR THE INDUCING AND INDUCED
FIELDS DUE TO LIGHTNING
K. Denno, New Jersey Institute of Technology, Newark,
New Jersey