

CONFERENCE RECORD-CONTENTS

INTRODUCTORY SESSION
MONDAY, JUNE 4, 1979
8:30 A.M.
AMPHITHEATRE A

MONDAY, JUNE 4, 1979
 9:00 A.M., AMPHITHEATRE A

ORAL SESSION IA -- LASER-PLASMA INTERACTIONS I
 SESSION CHAIRMAN: F. MAYER

- IAI-2 **INVITED PAPER:** RECENT RESULTS FROM THE SHIVA TARGET IRRADIATION FACILITY
 J.A. Glaze and K.R. Manes, *Lawrence Livermore Laboratory, Livermore, California*
- IA3 MULTILAYER SPHERICAL TARGET IMPLOSION EXPERIMENTS AT OSAKA
 Y. Kato, J. Kuroda, T. Sasaki, N. Miyanaga, K. Nishihara, T. Norimatsu, T. Yamanaka and C. Yamanaka, *Osaka University, Osaka, Japan*
- IA4 FAST PARTICLE MEASUREMENTS AND LASER FUSION
 T. H. Tan, A.H. Williams and G.H. McCall, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- IA5 CRITICAL DENSITY PROFILES OF CO₂ LASER-PRODUCED PLASMAS
 R. Fedosejevs, M.D. J. Burgess, G.D. Enright and M.C. Richardson, *National Research Council, Ottawa, Ontario, Canada*
- IA6 PARTICLE EMISSION FROM ISOLATED THIN FOIL PLASMAS PRODUCED BY HIGH POWER CO₂ LASER RADIATION
 C. Joshi, N.A. Ebrahim, D.M. Villeneuve and M.C. Richardson, *National Research Council, Ottawa, Ontario, Canada*
- IA7 SPACE-RESOLVED XUV EMISSION FROM ISOLATED THIN FOIL PLASMAS PRODUCED BY INTENSE NANOSECOND CO₂ LASER PULSES
 N.A. Ebrahim, C. Joshi, U. Feldman, G.A. Doschek and M.C. Richardson, *National Research Council, Ottawa, Ontario, Canada*
- IA8 LONG-PULSE LASER-PLASMA INTERACTIONS AT 10^{12} - 10^{15}
 B.H. Ripin, F.C. Young, S.P. Obenschain, R. Decoste, R.R. Whitlock, E.A. McLean, J.A. Stamper, J. Grun, S.E. Bodner, S.H. Gold and R.H. Lehmberg, *Naval Research Laboratory, Washington, D.C.*
- IA9 ABLATIVE ACCELERATION OF THIN-FOIL TARGETS
 R. Decoste, B.H. Ripin, S.E. Bodner and J. Grun, *Naval Research Laboratory, Washington, D.C.*
- IA10 SPATIALLY AND TEMPORALLY RESOLVED ABLATIVE ACCELERATION OF THIN FOIL TARGETS
 S.P. Obenschain, E.A. McLean, J.A. Stamper, S.H. Gold, R. Decoste, B.H. Ripin and S.E. Bodner, *Naval Research Laboratory, Washington, D.C.*
- IA11 MODELLING OF LASER FOIL INTERACTIONS
 J.H. Orens and J.P. Boris, *Naval Research Laboratory, Washington, D.C.*
- IA12 X-RAY STUDIES OF LASER-ACCELERATED FOILS
 F.C. Young, S.P. Obenschain and B.H. Ripin, *Naval Research Laboratory, Washington, D.C.*
- IA13 THREE-DIMENSIONAL PLASMA EFFECTS ON ENHANCED THERMAL COUPLING OF LASER BEAMS
 W.E. Maher, D.B. Nichols and R.B. Hall, *Boeing Aerospace Company, Seattle, Washington*

MONDAY, JUNE 4, 1979
 9:00 A.M., AMPHITHEATRE B

ORAL SESSION IB -- PLASMAS FOR FUSION RESEARCH I
 SESSION CHAIRMAN: A. KADISH

- IB1 HIGH INTENSITY NEUTRON SOURCE FOR FUSION-FISSION HYBRID BY ADDING THERMONUCLEAR PLASMA TO MEDIUM DENSITY, DIAMAGNETIC MIGMA
 S. Channon, B. Maglich, J. Ferrer, S. Menasian, R. Miller and J. Nering, *Fusion Energy Corporation, Princeton, New Jersey*
- IB2 A FINITE ORBIT TREATMENT OF PLASMA BUILDUP IN SMALL MIRRORS
 M. Campbell and G.H. Miley, *University of Illinois, Urbana, Illinois*
- IB3-4 **INVITED PAPER:** NON-AXIALLY SYMMETRIC TOROIDAL CONFINEMENT
 H. Grad, *New York University, New York, N.Y.*
- IB5 TANDEM MIRROR REACTORS
 R.S. Devoto, *Lawrence Livermore Laboratory, Livermore, California*

- IB6 INITIAL OPERATION OF TMX
 B.G. Logan, C.A. Anderson, J.F. Clauser, T.A. Casper, F.H. Coensgen, D.L. Correll, W.F. Cummins, R.P. Drake, J.G. Foote, A.H. Futch, R.K. Goodman, D.P. Grubb, A.L. Hunt, T. Kawabe, W.E. Nexsen, T.C. Simonen and D.R. Slaughter, *Lawrence Livermore Laboratory, Livermore, California*
- IB7 TRANSIENT PLASMA EXPERIMENTS IN A LINKED QUADRUPOLE STABILIZED MULTIPLE MIRROR CONFIGURATION
 M. Tuszewski, D. Price, R. Bravenec, K. Donniger, C. Hartman, A.J. Lichtenberg and M.A. Lieberman, *University of California, Berkeley, California*
- IB8 FLUCTUATION-INDUCED TRANSPORT IN A BUMPY TORUS PLASMA
 Y.C. Kim, E.J. Powers and J.Y. Hong, *University of Texas at Austin, Austin, Texas*, J.R. Roth and W.M. Krawczonek, *Nasa Lewis Research Center, Cleveland, Ohio*
- IB9 NEUTRAL BEAM HEATING CALCULATIONS FOR TORSATRONs
 J.L. Shohet and D.T. Anderson, *University of Wisconsin, Madison, Wisconsin*, J.A. Tataronis, *New York University, New York, N.Y.*, S. Rehker, *Max Planck Institut für Plasmaphysik, Garching-bei-Munchen, Federal Republic of Germany*
- IB10 NON-CLASSICAL NATURE OF THE HIGH-ENERGY FUSION-PRODUCT SLOWING IN DENSE PLASMAS
 C.K. Choi and W.R. Sutton, *University of Illinois, Urbana, Illinois*
- IB11 CONSTANT FLOW PINCH FROM ENERGETIC HIGH DENSITY PLASMA BEAM
 A.M. Ferencdi, O.K. Mawardi and R. Mesli, *Case Western Reserve University, Cleveland, Ohio*

MONDAY, JUNE 4, 1979
 9:00 A.M., AMPHITHEATRE G

ORAL SESSION IC -- HIGH POWER MICROWAVE GENERATION I
 SESSION CHAIRMAN: P.A. SPRANGLE

- IC1 OPERATION OF THE ELECTRON CYCLOTRON MASER AS A TRAVELLING WAVE AMPLIFIER
 V.L. Granatstein, L. Sefzor, L. Barnett, M. Read, K.R. Chu and P. Sprangle, *Naval Research Laboratory, Washington, D.C.*
- IC2 ANALYTICAL SCALING OF EFFICIENCY FOR THE GYROTRON TRAVELLING WAVE AMPLIFIER OPERATING AT CYCLOTRON HARMONICS
 K.R. Chu, A.T. Drobot, H.H. Szu and P. Sprangle, *Naval Research Laboratory, Washington, D.C.*
- IC3 FORWARD AND BACKWARD MODES OF OPERATION IN THE ELECTRON CYCLOTRON MASER
 R.A. Smith and P. Sprangle, *Naval Research Laboratory, Washington, D.C.*
- IC4 THE 28-GHZ, 200-KW CW ELECTRON CYCLOTRON HEATING SYSTEM FOR EBT-S
 H.O. Eason, G.F. Pierce, T.L. White and R.E. Wintenberg, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- IC5-6 **INVITED PAPER:** GYROTRON AMPLIFIERS AND OSCILLATORS FOR HIGH POWER AT HIGH FREQUENCY
 H.R. Jory, S.J. Evans, S.J. Hegji, J.F. Shively, R.S. Symons and N.J. Taylor, *Varian Associates, Palo Alto, California*
- IC7 HIGH POWER MICROWAVE GENERATION BY INTERACTION OF A FOILLESS DIODE INJECTED ROTATING ELECTRON BEAM WITH A PLASMA
 D. Tzsch and G. Benford, *University of California, Irvine, California*
- IC8 THE SELF-CONSISTENT NON-LINEAR THEORY OF FREE ELECTRON LASERS
 P. Sprangle, W.M. Manheimer and Cha-Mei Tang, *Naval Research Laboratory, Washington, D.C.*
- IC9 EFFICIENCY ENHANCEMENT IN THE FREE ELECTRON LASER
 W.M. Manheimer, P. Sprangle and Cha-Mei Tang, *Naval Research Laboratory, Washington, D.C.*
- IC10 A SCHEME FOR MODULATING AN ELECTRON BEAM AT OPTICAL WAVELENGTHS
 C.M. Tang, P. Sprangle and W.M. Manheimer, *Naval Research Laboratory, Washington, D.C.*
- IC11 STIMULATED RAMAN SCATTERING BY AN INTENSE RELATIVISTIC ELECTRON BEAM SUBJECTED TO A RIPPLED ELECTRIC FIELD
 G. Bekefi and R.E. Shefer, *M.I.T., Cambridge, Massachusetts*
- IC12 A RIPPLED WALL FREE ELECTRON LASER
 R.E. Shefer and G. Bekefi, *M.I.T., Cambridge, Massachusetts*

MONDAY, JUNE 4, 1979
 9:00 A.M., AMPHITHEATRE B

ORAL SESSION ID -- GASEOUS ELECTRONICS I
 SESSION CHAIRMAN: F. WILLIAMS

- ID1 STREAMER GROWTH IN A NON-SELF-SUSTAINING DISCHARGE
 P.S. Rostler and D.H. Douglas-Hamilton, *Avco Everett Research Laboratory Inc., Everett, Massachusetts*

- 102 PLASMA STABILITY ENHANCEMENT IN EXCIMER LASER DISCHARGES
R.T. Brown and W.L. Nighan, *United Technologies Research Center, East Hartford, Connecticut*
- 103 EFFECT OF MOLECULAR IONS ON THE ELECTRON TEMPERATURE OF A MEDIUM PRESSURE POSITIVE COLUMN PLASMA
Y. Ichikawa and S. Teii, *Musashi Institute of Technology, Tokyo, Japan*, Jen-Shih Chang, G.L. Ogram and R.M. Hobson, *York University, Toronto, Ontario, Canada*
- 104 EFFECT OF MOLECULAR ION PRODUCTION ON THE ELECTRON TEMPERATURE IN MEDIUM PRESSURE POSITIVE COLUMN PLASMAS
Y. Ichikawa, S. Matsumura and S. Teii, *Musashi Institute of Technology, Tokyo, Japan*
- 105 MEASUREMENT OF THE METASTABLE ATOMS IN THE POSITIVE COLUMN PLASMAS OF He, Ne AND He-Ne MIXTURE
Y. Ichikawa and S. Teii, *Musashi Institute of Technology, Tokyo, Japan*
- 106 RADIAL DISTRIBUTION OF ELECTRON DENSITY AND EXCITED ATOMS IN A PLASMA COLUMN PRODUCED BY A SURFACE WAVE
M. Moisan, R. Pantel and V.M.M. Glaude, *Université de Montréal, Montréal, Québec, Canada*, A. Ricard and P. Leprince, *Université de Paris, Orsay, France*
- 107-8 INVITED PAPER: DISCHARGE FORMATION ON A NANOSECOND TIME SCALE
L.E. Kline, *Westinghouse R&D Center, Pittsburg, Pennsylvania*
- 109 EXPERIMENTAL CHARACTERISTICS OF RF SURFACE WAVE PLASMA SOURCES
R. Fritz and J. Asmussen, Jr., *Michigan State University, East Lansing, Michigan*
- 1010 RF SURFACE WAVE GENERATED PLASMA SOURCES: THEIR PRACTICAL APPLICATION AND THEIR LIMITATIONS
J. Asmussen, R. Fritz, M.C. Hawley and R. Kerber, *Michigan State University, East Lansing, Michigan*
- MONDAY, JUNE 4, 1979
9:00 A.M., AMPHITHEATRE C
- ORAL SESSION IE -- FUSION REACTOR TECHNOLOGY
SESSION CHAIRMAN: R.G. MILLS
- IE1 FUELING MOVING RING FIELD-REVERSED MIRRORS
F.S. Felber, *General Atomic Company, San Diego, California*
- IE2 THE FUSION MATERIALS IRRADIATION TEST (FMIT) HIGH INTENSITY DEUTERON LINAC
M.D. Machalek, D.J. Liska and E.L. Kemp, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- IE3 LOW DEUTERON ENERGY (d,Li) NEUTRON SOURCE AND IMPACT ON TARGET DESIGN
P.J. Persiani, D.B. Boyle, N.A. Towne and S.M. Maier, *Argonne National Laboratory, Argonne, Illinois*
- IE4 CONCEPTUAL STUDY OF A NEUTRAL BEAM SYSTEM FOR A POWER GENERATING FUSION REACTOR
J.H. Kamperschroer, *General Atomic Company, San Diego, California*
- IE5 TOKAMAK NEUTRAL BEAM SYSTEM POWER EFFICIENCIES AND COSTS
L.D. Stewart, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*
- IE6 ²³³U BREEDING IN FUSION REACTOR BLANKETS
S.A. Kushneriuk and P.Y. Wong, *Chalk River Nuclear Laboratory, Chalk River, Ontario, Canada*
- IE7 DUST PARTICLE CHARGING TIME IN A MAGNETIC CONFINEMENT TYPE FUSION EXPERIMENT
Jen-Shih Chang, *York University, Toronto, Ontario, Canada*
- IE8 DESIGN OF A DOUBLET ENGINEERING TEST FACILITY
D.W. Graumann and J.M. Rawls, *General Atomic Company, San Diego, California*
- IE9-10 INVITED PAPER: PELLETT-PLASMA INTERACTION AND PROBLEM OF RE-FUELING FUSION DEVICES
L. Lengyel, *Max-Planck Institut für Plasmaphysik, Garching bei München, Federal Republic of Germany*
- MONDAY, JUNE 4, 1979
9:00 A.M., ROOM 2403
- POSTER SESSION IP -- PLASMA DIAGNOSTICS I
- IP1 A NEUTRON DIAGNOSTIC WHICH MEASURES Zeff IN A NEUTRAL BEAM DRIVEN TOKAMAK
D.R. Slaughter, *Lawrence Livermore Laboratory, Livermore, Washington, D.C.*
- IP2 CHARGE EXCHANGE MEASUREMENTS IN THE PRESENCE OF AUXILIARY HEATING ON PLT
S.L. Davis, H.P. Eubank, R.J. Goldston, R. Kaita, S.S. Medley and D. Mueller, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*
- IP3 RECENT EUV IMPURITY STUDIES ON THE ALCATOR TOKAMAK
S.L. Allen and H.W. Moos, *Johns Hopkins University, Baltimore, Maryland*, E.S. Marmor and J.L. Terry, *M.I.T., Cambridge, Massachusetts*
- IP4 POWER BALANCE MEASUREMENTS IN TOKAPOLE II DISCHARGES
R.J. Groebner, R.N. Dexter and J.C. Sprott, *University of Wisconsin, Madison, Wisconsin*
- IP5 ELECTRON CYCLOTRON EMISSION MEASUREMENTS ON THE VERSATOR II TOKAMAK
D.S. Stone, *M.I.T., Cambridge, Massachusetts*
- IP6 ORDINARY-MODE ELECTRON CYCLOTRON EMISSION FROM THE PRINCETON LARGE TOKAMAK (PLT) PLASMA
P.C. Efthimion, V. Arunasalam, B. Gaulke and J.C. Hosea, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*
- IP7 DIAGNOSTICS FOR A HIGH DENSITY, HIGH TEMPERATURE Z-PINCH
L.A. Jones, D.B. Thompson, W. Nunnally and S. Singer, *Los Alamos Scientific Laboratory, Los Alamos, New Jersey*
- IP8 NEON INJECTION EXPERIMENTS IN 2XIIB
R.P. Drake and H.W. Moos, *Johns Hopkins University, Baltimore, Maryland*
- MONDAY, JUNE 4, 1979
9:00 A.M., ROOM 2405
- POSTER SESSION IQ -- INTENSE ELECTRON AND ION BEAMS I
- IQ1 ION BEAM ENERGY DEPOSITION IN MATTER
T.A. Mehlhorn, *Sandia Laboratories, Albuquerque, New Mexico*
- IQ2 ION SPECIES MEASUREMENTS FROM A MAGNETICALLY INSULATED DIODE
J.M. Neri, D.A. Hammer and R.N. Sudan, *Cornell University, Ithaca, New York*
- IQ3 COLLECTIVE ION ACCELERATION WITH SPACE CHARGE WAVES
C.W. Roberson, P. Sprangle, R. Mako and Cha-Mei Tang, *Naval Research Laboratory, Washington, D.C.*
- IQ4 TOROIDAL COLLECTIVE ION ACCELERATOR
A. Fisher, P. Gilad, F. Goldin, R. Prohaska and N. Rostoker, *University of California, Irvine, California*
- IQ5 STUDY OF ION ACCELERATION AND ION EMISSION IN A BEAM PLASMA ION SOURCE
V.S. Venkatasubramanian and R.C. Barber, *University of Manitoba, Winnipeg, Manitoba, H.E. Duckworth, University of Winnipeg, Winnipeg, Manitoba, Canada*
- IQ6 DEVELOPMENT OF THE PULSELAC INJECTOR FOR ION RING FORMATION
J.B. Greenly, S.C. Glidden, D.A. Hammer, C.T. Duvall and R.N. Sudan, *Cornell University, Ithaca, New York*, S. Humphries, JR., *Sandia Laboratories, Albuquerque, New Mexico*
- IQ7 EXPERIMENTAL STUDIES OF THE REFLEX DIODE UNDER SHORT PULSE OPERATION
R.J. Hansman, JR., and G. Bekefi, *M.I.T., Cambridge, Massachusetts*
- IQ8 AN APPLIED B_z MAGNETICALLY INSULATED ION DIODE
M. Greenspan and R. Pal, *Cornell University, Ithaca, New York*, S. Humphries, JR., *Sandia Laboratories, Albuquerque, New Mexico*
- MONDAY, JUNE 4, 1979
9:00 A.M., ROOM 2407
- POSTER SESSION IR -- MAGNETOFLUIDDYNAMICS
- IR1 USE OF APPROXIMATE CODES FOR MAGNETOHYDRODYNAMIC STABILITY ANALYSIS
D. Dobrott, R.W. Moore and J.A. Tataronis, *General Atomic Company, San Diego, California*
- IR2 A SECOND STABILITY REGION FOR A SEQUENCE OF FINITE-β FLUX-CONSERVING TOKAMAK EQUILIBRIA
B. Coppi, A. Ferreira, J.W-K. Mark and L. Sugiyama, *M.I.T., Cambridge, Massachusetts*
- IR3 RADIOFREQUENCY IONIZATION OF HELIUM WITH FLOW AT INTERMEDIATE PRESSURES: THEORY AND EXPERIMENT
M.E. Talaat, *University of Maryland, College Park, Maryland*
- IR4 PROSPECTS OF COAL-FIRED MHD-GENERATOR WITH FLOW SEPARATION AT INSULATION SEGMENTS
K. Denno, *New Jersey Institute of Technology, Newark, New Jersey*
- IR5 TWO DIMENSIONAL MAGNETOHYDRODYNAMIC INSTABILITIES IN HIGH ENERGY IMPLODING PLASMA LINERS
T.W. Hussey, D.A. Kloc and N.F. Roderick, *Air Force Weapons Laboratory, Kirtland Air Force Base, New Mexico*
- IR6 HYDRODYNAMICS OF IMPLODING WIRE ARRAYS
A. Wilson and M. Chapman, *Systems, Science and Software, La Jolla, California*
- IR7 RESISTIVE WALL EFFECTS IN THE REVERSED FIELD PINCH, FEEDBACK STABILIZATION
G. Miller, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- MONDAY, JUNE 4, 1979
9:00 A.M., ROOM 2411
- POSTER SESSION IS -- NEUTRAL BEAMS FOR FUSION RESEARCH I
- ISI H⁻ AND D⁺ PRODUCTION IN PLASMAS
M. Bacal, *Ecole Polytechnique, Palaiseau, France*, G.W. Hamilton, *Lawrence Livermore Laboratory, Livermore, California*
- IS2 ELECTRON ENERGY RECOVERY ON A LONG PULSE CALUTRON TYPE PENNING DISCHARGE NEGATIVE ION SOURCE
W.K. Dagenhart and W.L. Stirling, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- IS3 PROBLEMS IN THE DESIGN OF A NEGATIVE ION STRIPPER FOR A HIGH ENERGY DEUTERIUM NEUTRAL BEAM INJECTOR
J.H. Fink and J.L. Erickson, *Lawrence Livermore Laboratory, Livermore, California*

- IS4 NEGATIVE ION SYSTEMS USING CHARGE-EXCHANGE IN SODIUM: RESULTS AND COMPARISON WITH CESIUM SYSTEMS
E.B. Hooper, JR., and P. Poulsen, *Lawrence Berkeley Laboratory, Berkeley, California*
- IS5 A SELF-EXTRACTION NEGATIVE ION SOURCE
K.N. Leung and K.W. Ehlers, *Lawrence Berkeley Laboratory, Berkeley, California*
- IS6 DEVELOPMENT OF INTENSE, LOW ENERGY H⁺ BEAMS FOR NEUTRAL BEAM SYSTEMS
K. Prelec, M.W. Grossman, R.A. Larson and R.B. McKenzie-Wilson, *Brookhaven National Laboratory, Upton, New York*

MONDAY, JUNE 4, 1979
2:00 P.M., AMPHITHEATRE A

ORAL SESSION 2A -- LASER-PLASMA INTERACTIONS II
SESSION CHAIRMAN: T.W. JOHNSTON

- 2A1 FAST ELECTRON TRANSPORT CALCULATIONS WITH THE DISCRETE-ORDINATES METHOD
D. Shvarts, *NRCN, Beer-Sheva, Israel*
- 2A2 PONDEROMOTIVE POTENTIAL EFFECTS ON TRANSPORT IN THE SHORT MEAN FREE PATH LIMIT: I
I.R.L. Berger and V. Powers, *KMS Fusion, Ann Arbor, Michigan*
- 2A3 PONDEROMOTIVE POTENTIAL EFFECTS ON TRANSPORT IN THE LONG MEAN FREE PATH LIMIT: II
K. Berger, *Oakland University, Rochester, Michigan*, L. Berger, *KMS Fusion, Ann Arbor, Michigan*
- 2A4 ANALYSIS OF LATERAL THERMAL CONDUCTION IN LASER PRODUCED PLASMAS
S.J. Gitomer, E.J. Linnebur and G.H. McCall, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- 2A5-6 INVITED PAPER: ELECTRON TRANSPORT EFFECTS IN LASER-PRODUCED PLASMAS
R.J. Mason, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- 2A7 A SIMPLE SPHERICAL ABLATIVE IMPLOSION MODEL
F.J. Mayer and J.W. Steele, *KMS Fusion, Ann Arbor, Michigan*, J.T. Larsen, *Lawrence Livermore Laboratory, Livermore, California*
- 2A8 ABSORPTION BY A SPHERICAL TARGET VS LASER FOCAL SHIFTS
H. Brysk and A.J. Scannapieco, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- 2A9 NONLINEAR INTERACTIONS FOR LASER FUSION
H. Hora, *University of New South Wales, Australia*, G.H. Miley, *University of Illinois, Urbana, Illinois*
- 2A10 RAMAN BACKSCATTER IN HIGH TEMPERATURE, INHOMOGENEOUS PLASMAS
W.L. Krueer, K.G. Estabrook, B.F. Lasinski and A.B. Langdon, *Lawrence Livermore Laboratory, Livermore, California*
- 2A11 STIMULATED BRILLOUIN BACKSCATTER MODEL FOR FLUID CODES
K. Estabrook and J. Harte, *Lawrence Livermore Laboratory, Livermore, California*
- 2A12 NONLINEAR BEAM PROPAGATION IN THE LAGRANGIAN DESCRIPTION
F.P. Mattar and J. Teichmann, *Université de Montréal, Montréal, Québec, Canada*
- 2A13 THEORY OF LASER-DRIVEN FUSION-FUEL PELLETS
F.S. Felber, *General Atomic Company, San Diego, California*

MONDAY, JUNE 4, 1979
2:00 P.M., AMPHITHEATRE F

ORAL SESSION 2B -- PLASMAS FOR FUSION RESEARCH II
SESSION CHAIRMAN: G. LOGAN

- 2B1-2 INVITED PAPER: REVIEW OF COMPACT TOROIDAL RESEARCH
H.L. Berk, *Lawrence Livermore Laboratory, Livermore, California*
- 2B3 EFFECT OF LOWER HYBRID WAVE TURBULENCE ON TEARING MODE INSTABILITY
A.K. Sundaram and A. Sen, *Physical Research Laboratory, Ahmedabad, India*
- 2B4 EQUILIBRIA AND EXTERNAL FIELD REQUIREMENTS OF NONCIRCULAR TOKAMAKS
O. Okada, H. Dalhed, J. DeLucia and M. Okabayashi, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*
- 2B5 DESIGN AND CONSTRUCTION OF THE FIRST BRAZILIAN TOKAMAK
S.W. Simpson, I.C. Nascimento, R.M.O. Galvao, R.P. Da Silva, R.M.P. Drozak, A.N. Fagundes and J.H. Vuolo, *Universidade de Sao Paulo, Sao Paulo, Brasil*
- 2B6 CROSS-FIELD DIFFUSION IN A TOKAMAK WITH LARGE TOROIDAL FIELD RIPPLES
A. Hershcovitch, J.F. Pipkins, W.C. Jennings and R.L. Hickok, *Rensselaer Polytechnic Institute, Troy, New York*
- 2B7 THE EFFECT OF TRAPPED PARTICLES ON BEAM INDUCED CURRENTS IN TOROIDAL PLASMAS
D.F.H. Start, J.G. Cordey and E.M. Jones, *Culham Laboratory, Abingdon, United Kingdom*
- 2B8 OBSERVATION OF THERMONUCLEAR NEUTRON EMISSION FROM BEAM-HEATED PLT PLASMAS
P. Colestock, H. Eubank, L. Grisham, J. Hovey, G. Schilling, L. Stewart, W. Stodiek, R. Stooksberry, J.D. Strachan and K.M. Young, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*

- 2B9 FUSION NEUTRON PRODUCTION DURING DEUTERIUM NEUTRAL BEAM INJECTION INTO DEUTERIUM PLASMAS IN THE PLT TOKAMAK
D.L. Jassby, P.L. Colestock, S. Davis, P.C. Efthimion, H.P. Eubank, R.J. Goldston, L.R. Grisham, R.J. Hawryluk, J. Hovey, D.W. Johnson, A.A. Mirin, G. Schilling, R. Stooksberry, L.D. Stewart, J.D. Strachan and H.H. Towner, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*

- 2B10 CONFINEMENT OF TRITIUM IN NEUTRAL BEAM HEATED PLASMAS IN THE PRINCETON LARGE TORUS (PLT)
R. Chrien, P.L. Colestock, J.D. Strachan and M. Ulrickson, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*

- 2B11 DEPOSITION AND BUILDUP OF ALPHA PARTICLES IN TOKAMAK
W.B. Downum, C.K. Choi and G.H. Miley, *University of Illinois, Urbana, Illinois*

MONDAY, JUNE 4, 1979
2:00 P.M., AMPHITHEATRE G

ORAL SESSION 2C -- HIGH POWER MICROWAVE GENERATION II
SESSION CHAIRMAN: S. HUMPHRIES

- 2C1 SELF-MAGNETICALLY INSULATED FLOW THROUGH TAPERED TRANSMISSION LINES
J.P. Vandevender, E.L. Neau and K.L. Brower, *Sandia Laboratories, Albuquerque, New Mexico*
- 2C2 MAGNETIC INSULATION OF LOAD DOMINATED BI-CONIC TRANSMISSION LINES
D.H. McDaniel, B.G. Epstein and J.W. Poukey, *Sandia Laboratories, Albuquerque, New Mexico*
- 2C3 THEORY OF MAGNETIC INSULATION
B.A. Lippmann, *Physics International Co., San Leandro, California*
- 2C4 ENERGY PRODUCTION BY DT DROPLETS IN INTENSE MICROWAVE FIELDS
J.G. Vidal, D.L. Enslay and S.M. Hornstein, *Lawrence Livermore Laboratory, Livermore, California*
- 2C5 SUPERFISH CALCULATIONS OF THE RESONANT FREQUENCIES FOR SOME SELECTED MAGNETRON CALCULATIONS
E. Garellis, *Lawrence Livermore Laboratory, Livermore, California*
- 2C6 THE CLMG COMPUTER CODE FOR A RELATIVISTIC MAGNETRON
R.M. Bevensee, *Lawrence Livermore Laboratory, Livermore, California*
- 2C7 NUMERICAL SIMULATION OF THE RELATIVISTIC MAGNETRON
A. Palevsky and G. Bekefi, *M.I.T., Cambridge, Massachusetts*, A.T. Drobot, *Science Applications, Inc., Vienna, Virginia*
- 2C8 A 1.5 MeV RELATIVISTIC e-BEAM MAGNETRON
A. Palevsky and G. Bekefi, *M.I.T., Cambridge, Massachusetts*
- 2C9 A SYMMETRICALLY LOADED RELATIVISTIC MAGNETRON
G. Craig, J. Pettibone and D. Enslay, *Lawrence Livermore Laboratory, Livermore, California*
- 2C10 A RELATIVISTIC MAGNETRON OSCILLATOR
W.P. Ballard, D.B. Ilic, S.A. Self and F.W. Crawford, *Stanford University, Stanford, California*
- 2C11 AN ALTERNATE APPROACH TO THE DESIGN OF A HIGH-POWER, RELATIVISTIC MAGNETRON
R.K. Parker, W.M. Black, R.A. Tobin and G. Farney, *Naval Research Laboratory, Washington, D.C.*
- 2C12-13 INVITED PAPER: MAGNETIC INSULATION IN THEORY AND IN APPLICATIONS
R.V. Lovelace, *Cornell University, Ithaca, New York*

MONDAY, JUNE 4, 1979
2:00 P.M., AMPHITHEATRE B

ORAL SESSION 2D -- PLASMA CHEMISTRY
SESSION CHAIRMAN: H.J. OSKAM

- 2D1 MEASUREMENT OF SURFACE POTENTIAL AND DYNAMIC WATER ABSORPTION RATE IN CELLULOSE STRIPS TREATED IN A MICROWAVE PLASMA
T.W. Chan Tang and R.G. Bosisio, *Ecole Polytechnique, Montréal, Québec, Canada*
- 2D2 POLYMERIZATION OF ORGANOSILICONES IN MICROWAVE DISCHARGES
A.M. Wrobel, M.R. Wertheimer and H.P. Schreiber, *Ecole Polytechnique, Montréal, Québec, Canada*
- 2D3 A NEW MICROWAVE-EXCITED OXYGEN PLASMA REACTOR SYSTEM
R. Snellenberger, J. Asmussen, Jr., R. Kerber and M.C. Hawley, *Michigan State University, East Lansing, Michigan*
- 2D4 ARGON/UF₆ PLASMA EXPERIMENTS: UF₆ REGENERATION AND PRODUCT ANALYSIS
W.C. Roman, M.F. Zabieliski and W.T. O'Flaherty, *United Technologies Research Center, East Hartford, Connecticut*
- 2D5 CONSEQUENCES AND CONTROL OF THE PLASMA SPACE POTENTIAL IN REACTIVE ION ETCHING TOOLS
F.J. Bresnock, *IBM East Fishkill Laboratory, Hopewell Junction, New York*
- 2D6 ENERGY DISTRIBUTION AND HEAT TRANSFER RATES IN A TRANSFERRED ARC PLASMA REACTOR
H.K. Choi and W.H. Gauvin, *McGill University, Montréal, Québec, Canada*
- 2D7-8 INVITED PAPER: FUNDAMENTALS AND APPLICATIONS OF PLASMA ETCHING
D.L. Flamm, *Bell Research Laboratories, Murray Hill, New Jersey*
- 2D9 SILICON NITRIDE PRODUCTION: II-ON THE REACTION OF SiCl₄ WITH NH₃ IN A PLASMA FURNACE
G. Perugini, *Istituto G. Donegani, Novara, Italy*

2D10 ON THE PROCESSES OF NITROGEN OXIDATION IN THE SMOULDERING DISCHARGE ON LIQUID OZONE SURFACE
S.W. Temko, K.W. Temko, S.K. Kuzmin, M.R. Hadgy-Ogly and T.V. Tagodovskaia, MGPI, Moscow, U.S.S.R.

2D11 CATALYTIC PROMOTION OF D-T FUSION REACTION BY SPECIAL TECHNIQUES
S.M. Ayub, Karachi, Pakistan

MONDAY, JUNE 4, 1979
2:00 P.M., AMPHITHEATRE C

ORAL SESSION 2E -- ADVANCED FUEL FUSION TECHNOLOGY
SESSION CHAIRMAN: J.R. McNALLY, Jr.

- 2E1 WIRE WOUND OCTUPOLE RING CONFIGURATIONS
L.O. Heflinger, D. Arnush, R. Margulies, T. Samec and R. Wuerker, TRW/DSSG, Redondo Beach, California
- 2E2 PASSIVE STABILIZATIONS OF LEVITATED CURRENT RINGS
L.O. Heflinger and R.F. Wuerker, TRW/DSSG, Redondo Beach, California
- 2E3-4 INVITED PAPER: TECHNOLOGY IMPLICATIONS OF ADVANCED FUSION FUEL CYCLES
C.C. Baker, R.G. Clemmer, J. Jung, D.L. Smith, C.K. Youngdahl, J. Krazinski, L.R. Turner, K. Evans, H.C. Stevens, D.A. Ehst and J.N. Brooks, Argonne National Laboratory, Argonne, Illinois, G.W. Miley and T. Blue, University of Illinois, Urbana, Illinois
- 2E5 APPROACH TO HIGH-EFFICIENCY, MINIMUM-ACTIVITY, ADVANCED-FUEL FUSION BLANKET DESIGN
R.E. Olson, J.G. Gilligan and G.H. Miley, University of Illinois, Urbana, Illinois
- 2E6 THE Migma PROGRAM OF CONTROLLED FUSION: DIAMAGNETIC WELL Migma SPHEROMAK AS ADVANCED FUEL FUSION POWER CELL
B. Maglich, S. Channon, J. Ferrer, J. Nering, S. Menasian and R. Milner, Fusion Energy Corporation, Princeton, New Jersey
- 2E7 DESIGN OF A SELF-SUSTAINED, ADVANCED-FUEL, FIELD REVERSED MIRROR REACTOR-SAFFIRE
J.G. Gilligan, G.H. Miley and D.E. Driemeyer, University of Illinois, Urbana, Illinois
- 2E8 SOME THOUGHTS ON THE p (${}^6\text{Li}, \alpha$) ${}^3\text{He}$ (${}^6\text{Li}, p$) ${}^8\text{Be}$ CHAIN REACTION
J. Rand McNally, JR., Oak Ridge National Laboratory, Oak Ridge, Tennessee

MONDAY, JUNE 4, 1979
2:00 P.M., AMPHITHEATRE 33II

ORAL SESSION 2F -- NUCLEAR-PUMPED LASERS
SESSION CHAIRMAN: G.H. MILEY

- 2F1 SPACE APPLICATION OF NUCLEAR-PUMPED LASERS
W.T. Naff and F.W. French, W.J. Schaefer Associates, Wakefield, Massachusetts
- 2F2 INTENSE PROTON BEAM PUMPED Ar/N₂ LASER
L.G. Miley, D.A. Hammer and R.A. McFarlane, Cornell University, Ithaca, New York
- 2F3 A STUDY OF Xe-NF₃ and Xe-NF₃-UF₆ GAS MIXTURES USING 2MV, PULSED PROTON BEAMS
J.R. Williams, M.J. Monahan, T.G. Miller and Q.C. Murphree, Auburn University, Auburn, Alabama, E.R. Fisher, Wayne State University, Detroit, Michigan
- 2F4 THE DYNAMICS AND ENERGISTICS OF PROTON BEAM DRIVEN Ar/Kr/F₂ AND CO/He GAS MIXTURES
S.S. Lim, and E.R. Fisher, Wayne State University, Detroit, Michigan
- 2F5 THE Ar-CO₂ ATOMIC CARBON NPL
M.A. Prelas, F.P. Boody and G.H. Miley, University of Illinois, Urbana, Illinois
- 2F6 VUV EMISSION FROM XENON AND ARGON EXCIMERS PRODUCED BY FISSION FRAGMENT EXCITATION
W.M. Hyghes, J.F. Davis, III, T.F. Wimet and W.L. Talbert, JR., Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 2F7 EXPERIMENTAL SIMULATIONS OF NUCLEAR PUMPED LASER PLASMAS (OPTICAL AND MASS SPECTROMETRIC STUDIES)
D.B. Depaola, L.W. Downes, S.D. Marcum, M. Touzeau, H.K. Wrench and W.E. Wells, Miami University, Oxford, Ohio
- 2F8 ABSOLUTE ELECTRON SCATTERING CROSS SECTIONS RELEVANT TO NUCLEAR-PUMPED LASER SYSTEMS
A. Chutjian and S. Trajmar, Jet Propulsion Laboratory, Pasadena, California
- 2F9-10 INVITED PAPER: REVIEW OF THE NASA NUCLEAR PUMPED LASER PROGRAM
F. Hohl, NASA Langley Research Center, Hampton, Virginia, R.J. Deyoung, Miami University, Oxford, Ohio
- 2F11 A FEASIBILITY STUDY FOR A KrF DIRECT NUCLEAR PUMPED LASER SYSTEM
Thomas G. Miller, Missile Research and Development Command, Redstone Arsenal, Alabama, J.R. Williams, M.J. Monahan and Q.C. Murphree, Auburn University, Auburn, Alabama, E.R. Fisher, Wayne State University, Detroit, Michigan
- 2F12 NEUTRONICS OF NUCLEAR PUMPED LASER (NPL) FUSION BLANKETS
F. Dolatshahi and J.G. Gilligan, University of Illinois, Urbana, Illinois
- 2F13 ON THE POSSIBILITY OF CONDUCTING A CRITICAL EXPERIMENT FOR TESTING THE PHYSICAL PRACTICABILITY OF CONTROLLABLE INERTIAL NUCLEAR FUSION
A.A. Vedenov and A.A. Filyukov, Academy of Science, Moscow, USSR

2F14 ELECTRON-BEAM-CONTROLLED CO₂ LASER OPERATING IN THE ACTIVE ZONE OF THE STATIONARY NUCLEAR REACTOR
G.A. Batyrbekov, V.A. Danilychev, I.B. Kovsh, M.P. Mardenov and M.U. Khassenov, Academy of Sciences of the Kazakh SSR and Lebedev Physics Institute, Moscow, USSR

MONDAY, JUNE 4, 1979
2:00 P.M., ROOM 2403

POSTER SESSION 2P -- PLASMA DIAGNOSTICS II

- 2P1 HIGH SPEED DETECTORS FOR PLASMA DIAGNOSTICS
P.B. Lyons, T.H. Tan and A. Williams, Los Alamos Scientific Laboratory, Los Alamos, New Mexico, L.P. Hocker, D. Simmons and P.A. Zagarino, EG&G, Santa Barbara, California and Las Vegas, New Mexico
- 2P2 XUV STREAKING SPECTROMETER
L.J. Suter, Lawrence Livermore Laboratory, Livermore, California
- 2P3 A NEW, HIGH-PERFORMANCE OSCILLOSCOPE FOR FAST, PLASMA DIAGNOSTICS
V.T. Trexler, R.C. Smith and D.S. Metzger, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 2P4 X-RAY DIODES FOR LASER FUSION PLASMA DIAGNOSTICS
R.H. Day and P. Lee, Los Alamos Scientific Laboratory, Los Alamos, New Mexico, E.B. Saloman, National Bureau of Standards, Washington, D.C., D.J. Nagel, Naval Research Laboratory, Washington, D.C.
- 2P5 SPATIAL DISTRIBUTION OF RADIATION FROM PLASMAS
J. Schivell, Princeton Plasma Physics Laboratory, Princeton, New Jersey
- 2P6 SPECTRAL INDEX DETERMINATION OF DISPERSIVE FLUCTUATIONS
Y.C. Kim, E.J. Powers and R.O. Withrow, University of Texas at Austin, Austin, Texas, J.R. Roth, University of Tennessee, Knoxville, Tennessee
- 2P7 LARGE ANGLE FIR LASER SCATTERING MEASUREMENTS FROM COLLECTIVE PLASMA FLUCTUATIONS
S. Ratliff, W.A. Peebles, A. Mase, H.K. Park, A. Semet and N.C. Luhmann, JR., University of California, Los Angeles, California
- 2P8 THE STUDY OF COLLECTIVE PLASMA FLUCTUATIONS IN THE UCLA MICROTOR TOKAMAK VIA FIR THOMSON SCATTERING
A. Semet, W.A. Peebles, A. Mase, N.C. Luhmann, JR and T. de Graauw, University of California, Los Angeles, California

MONDAY, JUNE 4, 1979
2:00 P.M., ROOM 2405

POSTER SESSION 2Q -- INTENSE ELECTRON AND ION BEAMS II

- 2Q1 PLASMA MOTION ACROSS A MAGNETIC FIELD
W. Peter and N. Rostoker, University of California, Irvine, California
- 2Q2 HIGH CURRENT DENSITY RELATIVISTIC ELECTRON BEAMS IN CONICAL DIODES
P. Gilad, E. Nardi and Z. Zinamon, Weizmann Institute of Science, Rehovot, Israel
- 2Q3 THEORETICAL STUDIES OF REB-TARGET INTERACTIONS IN PLASMA CHANNELS
J.A. Halbleib, SR. and T.P. Wright, Sandia Laboratories, Albuquerque, New Mexico
- 2Q4 OVERLAP OF INTENSE PARTICLE BEAMS
T.P. Wright, Sandia Laboratories, Albuquerque, New Mexico
- 2Q5 PLASMA HEATING BY A ROTATING RELATIVISTIC ELECTRON BEAM
S. Robertson and A. Fisher, University of California, Irvine, California
- 2Q6 IONIZATION OF DIATOMIC GASES BY RELATIVISTIC ELECTRON BEAMS
J.R. Cary, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 2Q7 STUDIES OF RADIAL BEAM BLOWUP AT THE MARYLAND ERA
E.T. Pappas, M.J. Rhee and M. Reiser, University of Maryland, College Park, Maryland

MONDAY, JUNE 4, 1979
2:00 P.M., ROOM 2407

POSTER SESSION 2R -- PLASMA WAVES, INSTABILITIES AND ANTENNAS I

- 2R1 PHASE-RESOLVED MEASUREMENTS OF FAST WAVE TOROIDAL EIGENMODES IN THE TEXAS TECH TOKAMAK
S.O. Knox, B. Blackwell, P.D. Coleman, M.O. Hagler and M. Kristiansen, Texas Tech University, Lubbock, Texas
- 2R2 INVESTIGATIONS OF VARIOUS PROBE SHEATH MATERIALS IN THE TEXAS TECH TOKAMAK
P.D. Coleman, B.D. Blackwell, S.R. Beckerich, M. Kristiansen and M.O. Hagler, Texas Tech University, Lubbock, Texas
- 2R3 RST, AN RF DRIVEN STEADY-STATE TOKAMAK
R. Prater and J. Dalessandro, General Atomic Company, San Diego, California
- 2R4 DC CURRENT EXCITED BY A TRAVELING FAST WAVE IN A BOUNDED PLASMA
C. Chu, R. Harvey, D. Bhadra, T. Hino and R. Prater, General Atomic Company, San Diego, California
- 2R5 EXPERIMENTS ON SPHERICAL ION ACOUSTIC SOLITONS
F. Ze, N. Hershkowitz, C. Chan and K.E. Lonngren, University of Iowa, Iowa City, Iowa

2R6 ELECTROMAGNETIC INSTABILITY IN AN OSCILLATING ELECTRIC FIELD
O. Ishihara and A. Hirose, *University of Saskatchewan, Saskatoon, Canada*

MONDAY, JUNE 4, 1979
2:00 P.M., ROOM 2411

POSTER SESSION 2S -- NEUTRAL BEAMS FOR FUSION RESEARCH II

- 2S1 INITIAL EXTRACTION FROM THE WISCONSIN BEAM-PLASMA ION SOURCE
J.R. Conrad, F.D. Popa and M.G. Rosing, *University of Wisconsin, Madison, Wisconsin*
- 2S2 THE BERKELEY MULTI-LINE-CUSP ION SOURCE
K.W. Ehlers and K.N. Leung, *Lawrence Berkeley Laboratory, Berkeley, California*
- 2S3 GAS INJECTION IN EBT-S FOR ASSESSMENT OF PARTICLE LOADING EFFECTS OF NEUTRAL BEAM INJECTION
K.H. Carpentier and J.C. Glowienka, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- 2S4 NEUTRAL BEAM HEATING OF DOUBLET III PLASMAS
J.H. Kamperschroer, F.B. Marcus and A.P. Colleraine, *General Atomic Company, San Diego, California*
- 2S5 DC ION SOURCE AND NEUTRAL BEAM INJECTOR DEVELOPMENT AT CHALK RIVER
R. Shubaly, *Atomic Energy of Canada Limited, Chalk River, Ontario, Canada*
- 2S6 ENGINEERING DESIGN PROBLEMS FOR THE 50 KeV NEUTRAL BEAM INJECTOR ON TEXTOR
E.B. Deksnis, *Canatom Ltée, Montréal, Québec, Canada*

TUESDAY, JUNE 5, 1979
9:00 A.M., AMPHITHEATRE A

ORAL SESSION 3A -- PLASMA DIAGNOSTICS I
SESSION CHAIRMAN: R. DECOSTE

- 3A1-2 INVITED PAPER: X-RAY DIODES FOR LASER FUSION PLASMA DIAGNOSTICS
R.H. Day, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- 3A3 TIME-RESOLVED OPTICAL DIAGNOSTICS OF THIN-FOIL PLASMAS
J.A. Stamper, E.A. McLean, S.P. Obenshain, B.H. Ripin and S. Gold, *Naval Research Laboratory, Washington, D.C.*
- 3A4 OPTICAL PROBING BEAM STUDIES OF LASER-ACCELERATED FOILS
S.H. Gold, S.P. Obenshain, B.H. Ripin, E.A. McLean and J.A. Stamper, *Naval Research Laboratory, Washington, D.C.*
- 3A5 GENERATION OF 15 ps SYNCHRONIZED DIAGNOSTIC LASER PULSES
J.E. Murray, D.J. Kutzenga, W.H. Lowdermilk and D.C. Downs, *Lawrence Livermore Laboratory, Livermore, California*
- 3A6 DYNAMIC PERFORMANCES OF THE I TO 2 PICOSECOND BILAMELLAR STREAK CAMERA
B. Boutry, C. Delmare and N. Fleurot, *Centre d'Etudes de Limell, Ville-neuve-St-Georges, France*
- 3A7 ELECTRON-ION RECOMBINATION CONTRIBUTIONS IN TOF ANALYSIS OF LASER PRODUCED PLASMAS
C.K. Manka, *Sam Houston State University, Huntsville, Texas*, R.H. Hughes and O.H. Zinke, *University of Arkansas, Fayetteville, Arkansas*
- 3A8 SPECTROSCOPIC STUDY OF THE PLASMA ON THE REAR SIDE OF A LASER-IRRADIATED FOIL
E.A. McLean, S.P. Obenshain, J.A. Stamper, S.H. Gold, B.H. Ripin, R. Decoste and S.E. Bodner, *Naval Research Laboratory, Washington, D.C.*
- 3A9 MOMENTUM MEASUREMENTS OF ABLATIVELY ACCELERATED THIN FOIL TARGETS
J. Grun, B.H. Ripin, and R. Decoste, *Naval Research Laboratory, Washington, D.C.*
- 3A10 LASER TARGET DT NEUTRON YIELD BY LEAD ACTIVATION
R.A. Lerche, J.W. Houghton and J.T. Ozawa, *Lawrence Livermore Laboratory, Livermore, California*
- 3A11 INFLUENCE OF NON-UNIFORM WORK FUNCTION ON THE MEASUREMENT OF PLASMA PARAMETERS BY ELECTROSTATIC PROBES
R. Godard, S.M.L. Prokopenko and J.G. Laframboise, *York University, Toronto, Ontario, Canada*, J.J. Berthelier, *Laboratoire de Géophysique Externe, Saint Maur des Fossés, France*
- 3A12 OBSERVATIONS OF ARGON X-RAY LINE EMISSION FROM Ar-SEEDED LASER FUSION TARGETS
L.N. Koppel, D.L. Matthews, V.W. Slivinsky, J.T. Larsen, S.M. Lane and N.M. Ceglio, *Lawrence Livermore Laboratory, Livermore, California*
- 3A13 NEUTRON ACTIVATION AS A DIAGNOSTIC FOR HIGH DENSITY ICF TARGETS
E.M. Campbell, J. DeLillis, W.M. Ploeger and M. Crowningshield, *Lawrence Livermore Laboratory, Livermore, California*

TUESDAY, JUNE 5, 1979
9:00 A.M. AMPHITHEATRE F

ORAL SESSION 3B -- PLASMA HEATING I
SESSION CHAIRMAN: I ALEXEFF

- 3B1 MINORITY PROTON HEATING WITH FAST MAGNETOSONIC WAVES IN THE PRINCETON LARGE TORUS (PLT)
D. Hwang, S. Bernabei, P.L. Colestock, S.L. Davis, P. Efthimion, J.C. Hosea, S. Medley, D. Mueller, J.D. Strachan, S. Suckewer and H.R. Thompson, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*

3B2 TRANSPORT CODE STUDY OF LOWER HYBRID HEATING OF TOKAMAKS TO IGNITION
R.W. Harvey and J.M. Rawls, *General Atomic Company, San Diego, California*

3B3-4 INVITED PAPER: RF HEATING ABOVE THE LOWER HYBRID FREQUENCY IN DOUBLET IIA
J.L. Luxon, H. Brooks, V.S. Chan, S.C. Chiu, J.C. DeBoo, R.L. Freeman, E.J. Heckman, T.H. Jensen, J. La Haye, J. Lohr, P. Moeller, T. Ohkawa, C. Riordan, J.F. Tooker and F. Vaslow, *General Atomic Company, San Diego, California*

3B5 DIRECT HEATING OF ELECTRONS IN TANDEM MIRROR CONFIGURATIONS
J.T. Woo and K.A. Connor, *Rensselaer Polytechnic Institute, Troy, New York*

3B6 STOR EXPERIMENT
A. Hirose, H. Kuwahara, Y. Itoh, S. Platz, H.M. Skarsgard and Y. Watanabe, *University of Saskatchewan, Saskatoon, Saskatchewan, Canada*

3B7 ECRH ABSORPTION IN A NON-UNIFORM MAGNETIC FIELD
J.F. Pipkins and R.L. Hickok, *Rensselaer Polytechnic Institute, Troy, New York*

3B8 MICROWAVE HEATING OF HOT, OVERDENSE PLASMAS
K. Eppley, D. Ensley and K. Estabrook, *Lawrence Livermore Laboratory, Livermore, California*

3B9 TURBULENT BULK HEATING OF PLASMAS BY PARAMETRIC INSTABILITIES
S.P. Kuo, B.R. Cheo and T.Q. Yip, *Polytechnic Institute of New York, Farmingdale, New York*

3B10 STABILIZATION OF PARAMETRIC DECAY INSTABILITIES BY HEATING EFFECT AND RELATED NONLINEAR PHENOMENA
S.P. Kuo and B.R. Cheo, *Polytechnic Institute of New York, Farmingdale, New York*

TUESDAY, JUNE 5, 1979
9:00 A.M., AMPHITHEATRE G

ORAL SESSION 3C -- INTENSE ELECTRON AND ION BEAMS I
SESSION CHAIRMAN: G. BEKEFI

- 3C1 CALCULATION OF A MAGNETICALLY INSULATED ION DIODE
J.P. Quintenz, J.W. Poukey and D.J. Johnson, *Sandia Laboratories, Albuquerque, New Mexico*
- 3C2 STUDIES OF COMPACT ANNULAR MI ION DIODES
D.J. Johnson, A.V. Farnsworth, JR., J.P. Quintenz, R.J. Leeper and E.J.T. Burns, *Sandia Laboratories, Albuquerque, New Mexico*
- 3C3 BUNCHING AND EFFICIENCY IN PLASMA FILLED ION DIODES
C.W. Mendel, JR., *Sandia Laboratories, Albuquerque, New Mexico*
- 3C4 THE LONG PULSE REFLEX TRIODE
T. Lockner, *Naval Research Laboratory, Washington, D.C.*
- 3C5 EFFICIENT UNIDIRECTIONAL PROTON GENERATION FROM AN INVERSE REFLEX TETRODE (IRT)
R.A. Mahaffey, J.A. Pasour, J. Golden and C.A. Kapetanakis, *Naval Research Laboratory, Washington, D.C.*
- 3C6 INVESTIGATION OF ION DIODE PHYSICS AND DIODE OPTIMIZATION FOR LIGHT-ION ICF EXPERIMENTS
F.L. Sandel, *Jaycor, Inc. Alexandria, Virginia*
- 3C7 2+ DIMENSIONAL NUMERICAL SIMULATIONS OF CURRENT BOOTSTRAPPING IN THE ELECTRON REFLEXING DIODE
J. Barker, S.A. Goldstein and R. Lee, *Naval Research Laboratory, Washington, D.C.*
- 3C8 SIMULATION OF PINCHED-REFLEX DIODES FOR FOCUSED ION BEAM GENERATIONS
A. Drobot, R. Lee, A. Goldstein, G. Cooperstein, *Naval Research Laboratory, Washington D.C.*
- 3C9 PRODUCTION AND FOCUSING OF 0.5 TW PROTON BEAMS
S.J. Stephanakis, G. Cooperstein, A. Goldstein, D. Mosher, F.W. Olyphant, F.L. Sandel and F.C. Young, *Naval Research Laboratory, Washington, D.C.*
- 3C10 SYSTEM REQUIREMENTS FOR LIGHT-ION-DRIVEN PELLET IGNITION
D. Mosher, G. Cooperstein and A. Goldstein, *Naval Research Laboratory, Washington, D.C.*
- 3C11-12 INVITED PAPER: RECENT ADVANCES IN PINCH BEAM ION DIODE RESEARCH FOR INERTIAL CONFINEMENT
G. Cooperstein, *Naval Research Laboratory, Washington, D.C.*

TUESDAY, JUNE 5, 1979
9:00 A.M., AMPHITHEATRE B

ORAL SESSION 3D -- GASEOUS ELECTRONICS AND LASER ISOTOPE SEPARATION
SESSION CHAIRMAN: D.H. DOUGLASS-HAMILTON

- 3D1 TRANSIENT CHARACTERISTICS OF NONEQUILIBRIUM DISCHARGE
J.P. Novak and M.M. Shoucri, *Institut de Recherche de l'Hydro-Québec, Varennes, Québec, Canada*
- 3D2 ELECTRON DENSITIES IN LASER-TRIGGERED DISCHARGES
R.J. Crumley, P.F. Williams and M.A. Gundersen, *Texas Tech University, Lubbock, Texas*
- 3D3 AN INEXPENSIVE AND SENSITIVE GAS DISCHARGE DETECTOR OF NEAR UV RADIATION
N.S. Kopeika, T. Karcher, E. Schmitt and C.S. IH, *University of Delaware, Newark, Delaware*
- 3D4 STATISTICAL TIME-LAG OF AIR CORONA DISCHARGES
G. Berger and R. Hahn, *Laboratoire de Physique des Décharges, Gif sur Yvette, France*

- 305 ON THE PLASMA OF GAS DISCHARGE IN THE REAL GAS AS AN OPEN SYSTEM
S.W. Temko, K.W. Temko and S.K. Kuzmin, MGPI, Moscow, USSR
- 306 HAVE WE REACHED THE LIMIT TO POWER TRANSMISSION?
M.M. Kekez and P. Savic, National Research Council, Ottawa, Ontario, Canada
- 307 IMPROVED GASEOUS INSULATING MIXTURES FOR PRACTICAL SYSTEMS
C.C. Chan, M.O. Pace and L.G. Christophorou, Oak Ridge National Laboratory, Oak Ridge, Tennessee and University of Tennessee, Knoxville, Tennessee
- 308 IONIZATION OF ATOMIC GAS BY LASERS
G. Erez, J. Oreg, M. Strauss and L.A. Levin, NRCN, Beer-Sheva, Israel
- 309 OPTIMIZATION OF THE INFRARED SELECTIVE DECOMPOSITION OF CF_3X
M. Gauthier, P.A. Hackett and C. Willis, National Research Council, Ottawa, Ontario, Canada
- 3D10 FAST ION EXTRACTION IN THE LASER ISOTOPE SEPARATION APPROACH
G. Hazak, Y. Gell, Y. Boneh and S. Goshen, NRCN, Beer-Sheva, Israel

TUESDAY, JUNE 5, 1979
9:00 A.M., ROOM 2405

POSTER SESSION 3Q -- COMPUTER APPLICATIONS TO PLASMA SCIENCE I

- 3Q1 RESISTIVE TEARING MODES IN TOROIDAL GEOMETRY
H.R. Hicks, B. Carreras and J.A. Holmes, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 3Q2 SPLINE INVERSION OF AN INTEGRAL EQUATION IN TOKAMAK POLOIDAL FIELD ANALYSIS
D.J. Strickler and Y-K.M. Peng, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 3Q3 EVOLUTION OF TOKAMAK EQUILIBRIA WITH PRE-PROGRAMMED CROSS SECTIONS
J.A. Holmes, Y-K.M. Peng and S.J. Lynch, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 3Q4 THREE-DIMENSIONAL MHD CALCULATIONS
C.H. Finan, Lawrence Livermore Laboratory, Livermore, California
- 3Q5 AXISYMMETRIC CYLINDRICAL PLASMA SIMULATION USING A ZERO-ELECTRON-MASS HYBRID MODEL
D.W. Hewett and A.G. SGRO, Los Alamos Scientific Laboratory, Los Alamos, New Mexico

TUESDAY, JUNE 5, 1979
9:00 A.M., AMPHITHEATRE C

ORAL SESSION 3E -- FIELD REVERSED RING CONFIGURATIONS I
SESSION CHAIRMAN: H.H. FLEISCHMANN

- 3E1 THE ION RING COMPRESSOR AS A HYBRID REACTOR
D.A. Horvath and T. Kamash, University of Michigan, Ann Arbor, Michigan
- 3E2 PROPAGATION OF ROTATING PROTON BEAMS
P.L. Dreike, J.B. Greenly, D.A. Hammer and R.N. Sudan, Cornell University, Ithaca, New York
- 3E3 RECENT DEVELOPMENTS ON THE FIELD-REVERSING E-LAYERS IN THE RECE-CHRISTA EXPERIMENT
R. Jayakumar, M.R. Parker, D.J. Rej, E.A. Terray and H.H. Fleischmann, Cornell University, Ithaca, New York
- 3E4 NUMERICAL CALCULATIONS OF PLASMA GUN OPERATION AND FORMATION OF FIELD REVERSED PLASMA
J.W. Shearer, J.L. Eddleman, C.W. Hartman and W.C. Turner, Lawrence Livermore Laboratory, Livermore, California
- 3E5-6 INVITED PAPER: THE SPHEROMAK
H.P. Furth, Princeton Plasma Physics Laboratory, Princeton, New Jersey
- 3E7 DESIGN STUDIES OF A FRM PILOT REACTOR STARTUP USING A HIGH ENERGY COAXIAL PLASMA GUN
C.W. Hartman, G.A. Carlson, W.S. Neef and A.C. Smith, JR., Lawrence Livermore Laboratory, Livermore, California
- 3E8 PARAMAGNETIC SPHEROMAK (PS-I)
G.C. Goldenbaum, Y.P. Chong, G. Hart and J.H. Irby, University of Maryland, College Park, Maryland
- 3E9 PROPAGATION OF A ROTATING RELATIVISTIC ELECTRON BEAM WITHOUT AN EXTERNAL GUIDE FIELD
J.D. Sethian, K.A. Gerber, D.N. Spector and A.E. Robson, Naval Research Laboratory, Washington, D.C.
- 3E10 A MULTIPOLE - MIRROR EXPERIMENT
J.W. Rudmin, James Madison University, Harrisonburg, Virginia

TUESDAY, JUNE 5, 1979
9:00 A.M., ROOM 2407

POSTER SESSION 3R -- PLASMA WAVES, INSTABILITIES AND ANTENNAS II

- 3R1 TWO-DIMENSIONAL EIGENMODE ANALYSIS OF THE TRAPPED-ION INSTABILITY
R. Marchand, G. Rewoldt and W.M. Tang, Princeton Plasma Physics Laboratory, Princeton, New Jersey
- 3R2 THE ROLE OF SHEAR KINEMATIC DRIFT IN DRIFT-CYCLOTRON INSTABILITY
P. Satyanarayana and P. Bakshi, Boston College, Chestnut Hill, Massachusetts
- 3R3 EXPERIMENTAL STUDY OF DRIFT DISSIPATIVE INSTABILITIES AND COMPARISON WITH A LOCALLY APPLIED SLAB MODEL THEORY
H. Van Andel, S.Q. Mah and C. Boucher, Université de Montréal, Montréal, Québec, Canada
- 3R4 NONLINEAR SELF-INTERACTION OF BERNSTEIN WAVES
J.R. Myra and C.S. Liu, University of Maryland, College Park, Maryland
- 3R5 POWER DEPOSITION AND NON-LINEAR EFFECTS IN A MAGNETOACOUSTIC WAVE HEATING EXPERIMENT
B.D. Blackwell, G. A. Collins, R.C. Cross and J.A. Lehane, University of Sydney, Sydney, Australia
- 3R6 EFFECT OF THE HIGHER ORDER CONTRIBUTION ON ION-ACOUSTIC SOLITARY WAVES
C.S. Lai and A. MacDonald, University Prince Edward Island, Charlottetown, Prince Edward Island, Canada

TUESDAY, JUNE 5, 1979
9:00 A.M., ROOM 2411

POSTER SESSION 3S -- ENERGY STORAGE

- 3S1 SUPERCONDUCTIVE MAGNETIC ENERGY STORAGE FOR COMMERCIAL TOKAMAK PULSED COILS
F.M. Heck and G.S. Smeltzer, Westinghouse Electric Corporation, Pittsburgh, Pennsylvania
- 3S2 ENERGY STORAGE FOR THE ANTARES 100-KJ LASER FUSION EXPERIMENT
K.B. Riepe, J. Jansen and G. Allen, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 3S3 PULSE POWER SYSTEMS FOR LARGE GLASS LASERS
W.L. Gagnon, B.M. Carder, and K. Whitham, Lawrence Livermore Laboratory, Livermore, California
- 3S4 OVERVOLTAGE PROTECTION AND SYSTEM STUDY AT PLASMA INITIATION FOR THE OHMIC HEATING COIL OF THE TFTR
Z. Zabar, Polytechnic Institute of New York, Brooklyn, New York, S. Ghoshroy, Ebasco Services, Inc., New York, New York

TUESDAY, JUNE 5, 1979
9:00 A.M., ROOM 2403

POSTER SESSION 3P -- LASER-PLASMA INTERACTIONS I

- 3P1 THERMAL SELF-FOCUSING OF A LASER BEAM IN A DENSE, LOW TEMPERATURE PLASMA
R.S.B. Ong and A. Schmitt, University of Michigan, Ann Arbor, Michigan
- 3P2 ABSORPTION AND SCATTERING OF LASER LIGHT BY A PLASMA
D.G. Colombant and W.M. Manheimer, Naval Research Laboratory, Washington, D.C.
- 3P3 STIMULATED BRILLOUIN SCATTERING IN REALISTIC PLASMA FLOW PROFILES
J.J. Thomson and C.J. Randall, Lawrence Livermore Laboratory, Livermore, California
- 3P4 FILAMENTARY BACKSCATTER FROM CO_2 LASER-TARGET INTERACTION
G.R. Mitchell, B. Grek, H. Pépin, F. Martin, T.W. Johnston and J.C. Kieffer, INRS-Energie, Varennes, Québec Canada
- 3P5 OBSERVATION OF STIMULATED BRILLOUIN SCATTERING IN MICROWAVE-PLASMA INTERACTIONS
H.E. Huey, A. Mase, N.C. Luhmann, JR and C. Pawley, University of California, Los Angeles, California
- 3P6 STIMULATED BRILLOUIN SCATTERING FROM A DENSE Z-PINCH PLASMA
C.R. Neufeld, P. Noel and A. Robert, Institut de Recherche de L'Hydro-Québec, Varennes, Québec, Canada
- 3P7 INVESTIGATION OF THE EFFECT OF LASER PRODUCED OPTICAL-BREAKDOWN PLASMA
H.C. Meng and M.R. Wang, Institute of Nuclear Energy Research, Taiwan, Republic of China

TUESDAY, JUNE 5, 1979
2:00 P.M., AMPHITHEATRE A

ORAL SESSION 4A -- PLASMA DIAGNOSTICS II
SESSION CHAIRMAN: N.C. LUHMANN

- 4A1 DEVELOPMENT OF AN OPTICALLY-PUMPED CW D_2O LASER FOR PLASMA DIAGNOSTICS
D.E. Evans, S.L. Prunty and M.C. Sexton, University College, Cork, Ireland
- 4A2 A LYMAN-ALPHA SOURCE FOR PLASMA DIAGNOSTICS
D.W. Koopman, R. Mahon, T. McIlrath and Y. Mui Yui, University of Maryland, College Park, Maryland
- 4A3 NON-INTERFERING MEASUREMENT OF THE PITCH ANGLE OF AN R.E.B. ROTATING IN A PLASMA, BY MEASUREMENT OF THE POLARIZATION OF THE CYCLOTRON RADIATION
D. Tzsch, K. Kato and G. Benford, University of California, Irvine, California
- 4A4 SCALE-UP OF HEAVY ION BEAM PROBE FOR EBT
F.M. Bieniosek, K.A. Connor and R.L. Hickok, Rensselaer Polytechnic Institute, Troy, New York

- 4A5 DEVELOPMENT OF BEAM PROBE DIAGNOSTICS FOR OPEN ENDED MINIMUM-B SYSTEMS IN ALEX BASEBALL
J.A. Kolawole, K. Pourrezaei, K.A. Connor and J.T. Woo, Rensselaer Polytechnic Institute, Troy, New York
- 4A6 COMPARATIVE MEASUREMENTS OF COPPER AND NICKEL DENSITIES IN A ROTATING PLASMA
C.J. Walsh, G.F. Brand and B.W. James, University of Sydney, Sydney, Australia
- 4A7 A Z-PINCH PLASMA SOURCE FOR LINE PROFILE STUDIES IN He
A.J. Barnard, J.E. Bernard and F.L. Curzon, University of British Columbia, Vancouver, British Columbia, Canada
- 4A8 SHORT-WAVELENGTH CUTOFF IN METALLIC GRATING REFLECTIVITY FOR PLASMA DIAGNOSTICS IN THE EXTREME VACUUM ULTRAVIOLET
P.S.P. Wei, Boeing Aerospace Co., Seattle, Washington
- 4A9-10 INVITED PAPER: CHARACTERISTICS OF A CUSP LASER PLASMA GENERATED FROM mm-SIZED D₂ PELLETS
R.E. Pecháček, Naval Research Laboratory, Washington, D.C.
- 4A11 RELATIVE TRANSITION PROBABILITY MEASUREMENTS OF ns-4p, nd-4p, and nf-3d TRANSITIONS IN KI
D.P. Aeschliman, Sandia Laboratories, Albuquerque, New Mexico
- 4A12 A THERMIONIC ION SOURCE FOR USE IN COLLISION EXPERIMENTS
D.W. Hughes, R.K. Feeney and A.T. Chapman, Georgia Institute of Technology, Atlanta, Georgia

TUESDAY, JUNE 5, 1979
2:00 P.M., AMPHITHEATRE F

ORAL SESSION 4B -- PLASMA HEATING II
SESSION CHAIRMAN: A. HIROSE

- 4B1 PLASMA HEATING BY A MODULATED RELATIVISTIC ELECTRON BEAM-PLASMA INTERACTION
K. Yatsui, M. Yatsuzuka, T. Fujii, M. Yokoyama, M. Masuzaki, T. Tsuzuki, K. Narihara and A. Mohri, Nagoya University, Nagoya, Japan
- 4B2 PLASMA HEATING IN THE TANDEM MIRROR BY A RELATIVISTIC ELECTRON BEAM
A. Itakura, T. Kawabe, S. Miyoshi, S. Taguchi, Y. Watanabe, M. Hoshino and K. Ishii, University of Tsukuba, Sakura-mura, Japan
- 4B3 EFFICIENT PRODUCTION OF HOT PLASMAS THROUGH MULTIPLE WIRE IMPLOSION IN TRANSMISSION LINE GENERATORS
H.W. Bloomberg, Science Applications, Inc., Vienna, Virginia
- 4B4 MICRO-PARTICLE ACCELERATION BEHIND CONVERGING SHOCK WAVES
J.H. Lau, G.D. Lougheed, M.M. Kekez and P. Savic, National Research Council, Ottawa, Ontario, Canada
- 4B5 SPHERICAL PINCHING IN THE REXIMPL0 EXPERIMENT
E. Panarella and R.P. Gupta, National Research Council, Ottawa, Ontario, Canada
- 4B6 FURTHER OBSERVATIONS OF ANOMALOUS COOLING OF A WALL-CONFINED PLASMA
D.M. Kraybill, L.J. Suter, D.L. Davis and J.C. Stevens, Lawrence Livermore Laboratory, Livermore, California
- 4B7-8 INVITED PAPER: MAGNETOACOUSTIC HEATING BY ION LANDAU DAMPING
Leaf Turner, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 4B9 COMBINED OHMIC, MAGNETIC COMPRESSION, AND NEUTRAL BEAM HEATING FOR THERMO-NUCLEAR PLASMAS
B.M. Ma and H. C. Hsieh, Iowa State University, Ames, Iowa

TUESDAY, JUNE 5, 1979
2:00 P.M., AMPHITHEATRE G

ORAL SESSION 4C -- INTENSE ELECTRON AND ION BEAMS II
SESSION CHAIRMAN: C. MENDEL

- 4C1-2 INVITED PAPER: HIGH CURRENT ION BEAM ACCELERATION AND TRANSPORT
S. Humphries, Jr., Sandia Laboratories, Albuquerque, New Mexico
- 4C3 ION BEAM PROPAGATION IN STRAIGHT AND TAPERED Z-PINCH PLASMA CHANNELS
P.F. Ottinger, D. Mosher and S.A. Goldstein, Naval Research Laboratory, Washington, D.C.
- 4C4 PLASMA CHANNEL RESPONSE TO PROPAGATING ION BEAMS
D.G. Colombant, S.A. Goldstein and D. Mosher, Naval Research Laboratory, Washington, D.C.
- 4C5 ELECTROMAGNETIC INSTABILITIES OF COLD NON-NEUTRAL BEAMS
B.B. Godfrey, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 4C6 CURRENT NON-NEUTRALIZATION EFFECTS IN HEAVY ION BEAM FUSION
A. Sternlieb, University of Maryland, College Park, Maryland, M. Lampe, Naval Research Laboratory, Washington, D.C., and A. Drobot, Science Applications, Inc., McLean, Virginia
- 4C7 EM FIELDS OF A PROPAGATING ELECTRON BEAM, ONE-DIMENSIONAL MODEL
K.A. Dreyer, Air Force Weapons Laboratory, Kirtland Air Force Base, New Mexico
- 4C8 IONIZATION BY DELTA RAYS
K.A. Dreyer, Air Force Weapons Laboratory, Kirtland Air Force Base, New Mexico
- 4C9 EIGENMODE INTERACTIONS IN RELATIVISTIC ANISOTROPIC PLASMAS
O. Doehler, G. Dohler, Northrop Corporation, Des Plaines, Illinois, and S. Smith, Naval Research Laboratory, Washington, D.C.
- 4C10 A CERENKOV-RAMAN RADIATION SOURCE
K. Busby, K. Felch, R.W. Layman and J.E. Walsh, Dartmouth College, Hanover, New Haven

- 4C11 AMPLIFICATION OF COHERENT BROADBAND CERENKOV RADIATION FROM ELECTRON BEAMS
J.L. Vomvoridis, Jaycor, Alexandria, Virginia, and P. Sprangle, Naval Research Laboratory, Washington, D.C.
- 4C12 ENHANCED DIFFUSION IN A LOW- β TURBULENT PLASMA
E.P. Szuszcwicz, D.N. Walker, J.C. Holmes, Naval Research Laboratory, Washington, D.C., and H. Leinbach, NOAA
- 4C13 SURFACE STABILITY OF MAGNETICALLY CONFINED INTENSE NEGATIVE DEUTERIUM ION BEAMS FOR PLASMA HEATING
J.M. Dolique, Université de Grenoble, Grenoble, France

TUESDAY, JUNE 5, 1979
2:00 P.M. AMPHITHEATRE B

ORAL SESSION 4D -- PLASMA FOCUS
SESSION CHAIRMAN: K.D. WARE

- 4D1 2D MHD RESULTS FOR A 5 MJ, HOLLOW ANODE PLASMA FOCUS
S. Maxon, Lawrence Livermore Laboratory, Livermore, California
- 4D2 CALCULATIONS OF PLASMA FOCUS EXPERIMENTS
P.G. Ettgroth, Lawrence Livermore Laboratory, Livermore, California
- 4D3 INTERFEROMETRIC INVESTIGATIONS OF PLASMA FOCUS DYNAMICS
J.K. Appelt, Institute of Nuclear Research, Swierk, Poland
- 4D4 COUPLING DYNAMICS OF AN EXPLOSIVE GENERATOR POWERED PLASMA FOCUS
B.L. Freeman, R.S. Caird, D.J. Erickson, H.W. Kruse and C.M. Fowler, Los Alamos Scientific Laboratory, Los Alamos, California
- 4D5 USE OF THE EXPLOSIVE MHD GENERATORS TO POWER THE PLASMA FOCUS
Yu.A. Bashkatov, Yu.A. Burenin, V.V. Poljudov and G.A. Shvetsov, Institute of Hydrodynamics, Academy of Sciences, Novosibirsk, USSR
- 4D6 A DENSE-PLASMA LASER EXCITATION SOURCE
J.H. Lee, Vanderbilt University, Nashville, Tennessee, D.R. McFarland and F. Hohl, NASA Langley Research Center, Hampton, Virginia
- 4D7 RESONANCE ABSORPTION OF CO₂ LASER LIGHT IN A PLASMA FOCUS WITH MAGNETIC FIELD
Y. Kitagawa, Y. Yamada, I. Tsuda, M. Yokoyama and C. Yamanaka, Osaka University, Osaka, Japan
- 4D8 MEASUREMENTS OF HIGH ENERGY DEUTERONS IN A LARGE DIAMETER PLASMA FOCUS DEVICE
R.L. Gullickson, A. Gentilini, J.P. Rager and K. Steinmetz, Associazione Euratom-CNEN sulla Fusione, Frascati, Italy
- 4D9 ELECTRON CURRENTS GENERATED BY A DENSE PLASMA FOCUS
G. Gerdin, W. Stygar and M. Vernon, University of Illinois, Urbana, Illinois
- 4D10 COMBINED REB-LASER INTERACTION WITH PLANE SOLID TARGET
V.A. Gribkov, Flora Group, Lebedev Physical Institute, Moscow, USSR
- 4D11-12 INVITED PAPER: PLASMA FOCUS RESEARCH AT THE CENTRE D'ETUDES DE LIMEIL
A. Bernard, J.P. Garçonnet, A. Jolas, J.P. Le Breton, J. de Mascureau and P. Romary, Centre d'Etudes de Limeil, Villeneuve Saint-Georges, France

TUESDAY, JUNE 5, 1979
2:00 P.M., AMPHITHEATRE C

ORAL SESSION 4E -- SWITCHGEAR ARC TECHNOLOGY
SESSION CHAIRMAN: R.E. KINSTINGER

- 4E1 FAST OPENING SWITCH FOR MEGAMPERE INDUCTIVE STORAGE SYSTEMS
D. Conte, R.D. Ford, W.H. Lupton and I.M. Vitkovitsky, Naval Research Laboratory, Washington, D.C.
- 4E2 INDUCTIVE AND PLASMA FORMATION EFFECTS ON CURRENT RISE RATE IN ULTRA-FAST HYDROGEN THYRATRONS
S. Friedman, R. Caristi, D. Turnquist and S. Merz, EG&G, Inc., Salem, Massachusetts
- 4E3 ELECTRON BEAM INITIATED SPARK GAP BREAKDOWN
K. McDonald, M. Newton, E.E. Kunhardt, M. Kristiansen and M.O. Hagler, Texas Tech University, Lubbock, Texas
- 4E4 ELECTRICAL BREAKDOWN OF SOLID INSULATORS IN VACUUM
J.A. Blatsios and R. Hackam, University of Windsor, Windsor, Ontario, Canada
- 4E5-6 INVITED PAPER: ELECTRIC ARCS IN TRANSVERSE AERODYNAMIC AND MAGNETIC FIELDS
D.V. Benenson, State University of New York, Buffalo, New York
- 4E7 RADIATIVE POWER FROM AN SF₆ ARC
A. Lee and D. Bhasavanich, Westinghouse Electric Corporation, Pittsburg, Pennsylvania
- 4E8 TEMPERATURE DIAGNOSTICS APPLICABLE TO TURBULENT ARCS
Y.K. Chien and D.M. Benenson, State University of New York, Buffalo, New York
- 4E9 ARC BROADENING BY SHOCK HEATING IN THE DOWNSTREAM SECTION OF NOZZLES
H.T. Nagamatsu, Rensselaer Polytechnic Institute, Troy, New York, G. Frind and R.E. Sheer, JR., General Electric Co., Schenectady, New York
- 4E10 EQUIDISTOMETRICAL EVALUATION OF A FILM RECORD OF AN SF₆ SWITCHING ARC
B. Svejda, B. Gross, Research Institute of Electrical Apparatus, Brno, Czechoslovakia and Technical University, Brno, Czechoslovakia

TUESDAY, JUNE 5, 1979
2:00 P.M., AMPHITHEATRE 3311

ORAL SESSION 4F -- PLASMA-WALL INTERACTIONS
SESSION CHAIRMAN: J.G. Martel

- 4F1 THE INFLUENCE OF SURFACE TRAPPING ON THE REFLECTION OF HYDROGEN ATOMS FROM TITANIUM
D.P. Jackson, Atomic Energy of Canada Limited, Chalk River, Ontario, Canada
- 4F2 HELIUM BLISTERING: RECENT RESULTS ON THE MECHANISMS OF FORMATION AND DISAPPEARANCE
B. Terreault, G. Abel, G. Ross, R.G. St-Jacques and G. Veilleux, INRS-Energie, Varennes, Québec, and J.P. Labrie, Université de Montréal, Montréal, Québec, Canada
- 4F3-4 INVITED PAPER: MEASURING HYDROGEN ISOTOPE DENSITY AND VELOCITY DISTRIBUTIONS OF THE TOKAMAK EDGE PLASMA
S.A. Cohen, Princeton Plasma Physics Laboratory, Princeton, New Jersey
- 4F5 IMPLANTATION AND REFLECTION OF MEDIUM ENERGY HYDROGEN AND HELIUM INCIDENT ON SOLID SURFACES
P.C. Lichtenberger and J.E. Robinson, McMaster University, Hamilton, Ontario, Canada, and D.P. Jackson, Atomic Energy of Canada Limited, Chalk River, Ontario, Canada
- 4F6 IMPURITIES AND PLASMA INDUCED WALL CHANGES IN THE ALCATOR-A TOKAMAK
J.E. Robinson, E.S. Marmor and A. Razdow, MIT, Cambridge, Massachusetts
- 4F7 ISX-B BUNDLE DIVERTOR MATERIAL STUDIES
R.E. Clausing, R.A. Langley, A.T. Mense and W.R. Wing, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 4F8 MEASUREMENT OF PLASMA TRANSPORT OF FIRST WALL AND LIMITER MATERIALS IN ALCATOR-C
S.W. Poehlman, P.C. Lichtenberger and D.A. Thompson, McMaster University, Hamilton, Ontario, Canada, J.E. Robinson and E.S. Marmor, MIT, Cambridge, Massachusetts
- 4F9 PLASMA-SURFACE ARCING IN FUSION DEVICES
G.H. Miley, University of Illinois, Urbana, Illinois
- 4F10 WALL EROSION BY PLASMA-INDUCED ARCING
P. Mióduszewski, R.E. Clausing and L. Heatherly, Oak Ridge National Laboratory, Oak Ridge, Tennessee

TUESDAY, JUNE 5, 1979
2:00 P.M., ROOM 2403

POSTER SESSION 4P -- LASER-PLASMA INTERACTIONS II

- 4P1 PINHOLE PHOTOGRAPHS FROM LASL HELIOS EXPERIMENTS
D.B. Van Hulsteyn, R. Kopp, W.C. Priedhorsky and G.H. McCall, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 4P2 THE EFFECT OF NON-UNIFORM LASER DEPOSITION ON EXPLODING PUSHER TARGETS
W.P. Gula, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 4P3 LINEAR STABILITY OF SELF-SIMILAR IMPLSIONS
D.L. Book and I.B. Bernstein, Naval Research Laboratory, Washington, D.C.
- 4P4 STUDY OF SMALL-SCALE STRUCTURES IN A CO₂ LASER CREATED PLASMA
F. Martin, H. Pepin, B. Grek and T.W. Johnston, INRS-Energie, Varennes, Québec, Canada
- 4P5 VISCOSITY ESTIMATION AND DIMENSIONAL ANALYSIS OF HOLE FORMATION IN THIN FOLDS PRODUCED BY HIGH POWER LASERS
B. Arad, S. Eliezer, H.M. Loebenstein, A. Zigler, H. Zmora and S. Zweigenbaum, Soreq Nuclear Research Center, Yavne, Israel
- 4P6 MOMENTUM MEASUREMENTS AND NON-LINEAR EFFECTS IN LASER PRODUCED PLASMAS
B. Arad, S. Eliezer, S. Jackel, H.M. Loebenstein, I. Pelah, A. Zigler, H. Zmora and S. Zweigenbaum, Soreq Nuclear Research Center, Yavne, Israel
- 4P7 X-RAY EMISSION CHARACTERISTICS OF PLASMAS CREATED BY THE INTERACTION OF 10.6 μm LASER RADIATION WITH VARIOUS TARGETS
H. Pepin, F. Martin, J.C. Kieffer, G. Mitchell, B. Grek and T.W. Johnston, INRS-Energie, Varennes, Québec, Canada

TUESDAY, JUNE 5, 1979
2:00 P.M., ROOM 2405

POSTER SESSION 4Q -- COMPUTER APPLICATIONS TO PLASMA SCIENCE II

- 4Q1 THE NONLINEAR EVOLUTION OF THE BUMP-ON-TAIL INSTABILITY
M.M. Shoucri, Institut de recherche de l'Hydro-Québec, Varennes, Québec, Canada
- 4Q2 THE COLLISIONLESS PLASMA-SHEATH EQUATION WITH HOT ION VOLUMETRIC SOURCES
R.M. Wieland, G.A. Emmert, A.T. Mense and J.N. Davidson, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 4Q3 COMPUTER SIMULATION OF AN INJECTION MODE-LOCKED TEA CO₂ LASER OSCILLATOR
S.B. Nickerson and I.P. Shkarofsky, MPB Technologies Inc., Ste-Anne de Bellevue, Québec, Canada
- 4Q4 MINICOMPUTER EVALUATIONS OF ELECTRON ENERGY DISTRIBUTION FUNCTIONS FROM ELECTROSTATIC PROBE CHARACTERISTICS
G.R. Taylor, James Madison University, Harrisonburg, Virginia
- 4Q5 THE IMPLEMENTATION OF DATA ACQUISITION AND CONTROL OF THE ORNL NEUTRAL BEAM INJECTORS ON THE PLT DEVICE
M. Katz, J.E. Rossmassler and R.W. Stooksberry, Princeton Plasma Physics Laboratory, Princeton, New Jersey

TUESDAY, JUNE 5, 1979
2:00 P.M., ROOM 2407

POSTER SESSION 4R -- MAGNETICS

- 4R1 STRUCTURAL BEHAVIOR OF THE DOUBLET III TOROIDAL FIELD COIL DURING STARTUP PLASMA CONDITIONS
F.A. Puhn and E.E. Reis, General Atomic Company, San Diego, California
- 4R2 COMPUTER MODELING FOR BUMPY TORUS MAGNET DESIGN
J.E. Lenz and R.E. Juhala, McDonnell Douglas Corporation, St-Louis, Missouri
- 4R3 OPTIMIZING THE TOROIDAL MAGNETIC FIELD IN AN EBT DEVICE
R.E. Juhala and J.E. Lenz, McDonnell Douglas Corporation, St-Louis, Missouri
- 4R4 MAGNETIC FIELD CHARACTERISTICS OF THE ULTIMATE TORSATRON
T. Kruckewitt and J.L. Shohet, University of Wisconsin, Madison, Wisconsin
- 4R5 EVALUATION OF ERROR FIELDS CAUSED BY TOROIDAL FIELD COILS IN JT-60
S. Nishio, M. Ohkubo and K. Kawasaki, Tokai Research Establishment, Jaeri, Japan

PLASMA SCIENCE AND APPLICATIONS COMMITTEE
BUSINESS MEETING
TUESDAY, JUNE 5, 1979
5:00 P.M.
AMPHITHEATRE F

CONFERENCE COCKTAILS AND
BANQUET
TUESDAY, JUNE 5, 1979
6:00 P.M.
CHALET DE LA MONTAGNE

WEDNESDAY, JUNE 6, 1979
9:00 A.M., AMPHITHEATRE A

ORAL SESSION 5A -- LASER-PLASMA INTERACTIONS III
SESSION CHAIRMAN: B.H. RIPIN

- 5A1 MAGNETIC FIELD GENERATION IN A HYDROGEN PLASMA BY LASER-PRODUCED SHOCK WAVES
F. Schwirzke and C.Y. Parlar, Naval Postgraduate School, Monterey, California
- 5A2 SOFT X-RAY DIAGNOSTICS FOR MAGNETICALLY CONFINED CO₂ LASER-HEATED PLASMAS
N.G. Loter, W. Halverson and B. Lax, Francis Bitter National Magnet Laboratory, Cambridge, Massachusetts
- 5A3 STIMULATED BRILLOUIN SCATTERING FROM CO₂ LASER PLASMAS IN STRONG TRANSVERSE MAGNETIC FIELDS
C. Karmendy and B. Lax, Francis Bitter National Magnet Laboratory, Cambridge, Massachusetts
- 5A4 FILAMENTATION IN AN UNDERDENSE, CO₂ LASER-PRODUCED PLASMA
A. Ng, D. Salzmann and A.A. Offenberger, University of Alberta, Edmonton, Alberta, Canada
- 5A5 PREIONIZATION EFFECTS ON BRILLOUIN SCATTERING: INTERFEROMETRIC STUDY
C.E. Clayton, M.J. Herbst and F.F. Chen, University of California, Los Angeles, California
- 5A6 INTERACTION OF 10.6 μm RADIATION WITH LONG SCALE (300 μm) PLASMAS
H.A. Baldis, P.B. Corkum and N.H. Burnett, National Research Council, Ottawa, Ontario, Canada
- 5A7 CO₂ LASER INTERACTIONS IN A HIGH DENSITY Z-PINCH PLASMA
B. Hilko, J. Meyer and G.F. Albrecht, University of British Columbia, Vancouver, British Columbia, Canada
- 5A8 DENSITY EVOLUTION DURING 1 eV PLASMA DECAY
W.W. Byszewski, Texas Tech University, Lubbock, Texas, A. Cybulski and D. Wroblewski, Polish Academy of Science, Warsaw, Poland
- 5A9-10 INVITED PAPER: INTERACTION AND TRANSPORT EXPERIMENTS AT DIFFERENT WAVELENGTHS
E. Fabre and l'Equipe laser PMI, Ecole Polytechnique, Palaiseau, France
- 5A11 CONDITIONS FOR SOFT X-RAY LASING ACTION IN CO₂-LASER PRODUCED PLASMA
S. Suckewer and H. Fishman, Princeton Plasma Physics Laboratory, Princeton, New Jersey
- 5A12 A NEW TECHNIQUE FOR GENERATING NANOSECOND CO₂ LASER PULSES
V.V. Apollonov, P.B. Corkum, R.S. Taylor, A.J. Alcock and H.A. Baldis, National Research Council, Ottawa, Ontario, Canada

5A13 A MULTI-ATMOSPHERE SHORT PULSE UV-PREIONIZED CO₂ LASER SYSTEM
K.O. Tan, D.J. James and J.A. Nilson, *Lumonics Research Limited, Kanata, Ontario, Canada*, N.H. Burnett, A.J. Alcock and H.A. Baldis, *National Research Council, Ottawa, Ontario, Canada*

WEDNESDAY, JUNE 6, 1979
9:00 A.M., AMPHITHEATRE F

ORAL SESSION 5B -- COMPUTER APPLICATIONS TO PLASMA SCIENCE I
SESSION CHAIRMAN: C.H. FINAN

- 5B1 FLOW AND TEMPERATURE FIELDS IN A FREE DISCHARGE INDUCTIVELY COUPLED R.F. PLASMA
R. Gagné and M.I. Boulos, *Université de Sherbrooke, Sherbrooke, Québec, Canada*, R.M. Barnes, *University of Massachusetts, Amherst, Massachusetts*
- 5B2 NONLINEAR STUDIES OF RESISTIVE INTERCHANGE INSTABILITIES IN A REVERSED FIELD PINCH
D. Schnack and J. Killeen, *Lawrence Livermore Laboratory, Livermore, California*
- 5B3 THE HIGH DENSITY Z-PINCH; TWO-DIMENSIONAL CALCULATIONS
I.R. Lindemuth, J.H. Brownell and T.A. Oliphant, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*, L.J. Suter, *Lawrence Livermore Laboratory, Livermore, California*
- 5B4 A NEW IMPLICIT ALGORITHM FOR THREE-DIMENSIONAL MAGNETOHYDRODYNAMICS
D.C. Barnes and C.E. Seyler, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- 5B5-6 INVITED PAPER: IMPORTANT NONLINEAR LASER FUSION PLASMA PROBLEMS SOLVED BY NUMERICAL SIMULATION
D.W. Forslund, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- 5B7 MHD/TRANSPORT INTERACTIONS IN TOKAMAKS
W.A. Houlberg and J.T. Hogan, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- 5B8 MODELING OF REACTING TOKAMAK PLASMAS WITH A FOKKER-PLANCK/TRANSPORT CODE
A.A. Mirin, *Lawrence Livermore Laboratory, Livermore, California*, D.L. Jassby, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*
- 5B9 NUMERICAL STUDIES OF THE SPHEROMAK
A.M.M. Todd, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*
- 5B10 NUMERICAL STUDY OF THERMIONIC CONVERTER PLASMAS
C.C. Wang, *Thermo Electron Corporation, Waltham, Massachusetts*

WEDNESDAY, JUNE 6, 1979
9:00 A.M., AMPHITHEATRE G

ORAL SESSION 5C -- NEUTRAL BEAMS FOR FUSION RESEARCH
SESSION CHAIRMAN: J.H. FINK

- 5C1-2 INVITED PAPER: PROSPECTS FOR NEUTRAL BEAM LINES USING POSITIVE ION SOURCES
A.T. Forrester, *University of California, Los Angeles, California*
- 5C3 NEUTRALIZER AND POWER EFFICIENCIES OF NEUTRON BEAM
M. Ma, *Iowa State University, Ames, Iowa*
- 5C4 SYNTHETIC TESTING AND CONDITIONING OF ION SOURCES
M.D. Nahemow, A.M. Sletten and J.H. Fink, *Westinghouse Electric Corporation, Pittsburgh, Pennsylvania*
- 5C5 CHARACTERISTICS OF A PLASMA GENERATOR FOR A RECTANGULAR LONG PULSE NEUTRAL BEAM INJECTOR
C.C. Tsai, H.H. Haselton, W.L. Stirling, R.R. Feezell, M.M. Menon, P.M. Ryan and D.E. Schechter, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- 5C6 INVESTIGATION OF STRAY PARTICLE LOSS IN DEFLECTION MAGNET REGION OF NEUTRAL BEAM LINE
J. Kim and M.M. Menon, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- 5C7 CHARACTERISTICS OF THE PDX PROTOTYPE ION SOURCE
M.M. Menon, C.C. Tsai, G.C. Barber, W.L. Gardner, H.H. Haselton, N.S. Ponte, P.M. Ryan, D.E. Schechter, D.O. Sparks, W.L. Stirling, J.H. Whealton and R.E. Wright, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- 5C8 COMPARISON OF SLOT AND CYLINDER OPTICS
J.H. Whealton, E.F. Jaeger and R.W. McGaffey, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- 5C9 CHARGED PARTICLE RECOVERY EXPERIMENT USING A CROSSED FIELD MAGNETIC BLOCKING OF ELECTRONS
J. Kim, W.L. Stirling, W.K. Dagenhart, G.C. Barber, H.H. Haselton, N.S. Ponte, C.C. Tsai and R.E. Wright, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*
- 5C10 HIGH-RESOLUTION SPECTROSCOPIC MEASUREMENTS ON NEUTRAL BEAMS AND ION SOURCES
D.H. McNeill and J. Kim, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*

WEDNESDAY, JUNE 6, 1979
9:00 A.M., AMPHITHEATRE B

ORAL SESSION 5D -- THERMIONICS AND PLASMA DIODES I
SESSION CHAIRMAN: J.F. MORRIS

- 5D1 THE US DEPARTMENT OF ENERGY THERMIONICS PROGRAM
O.S. Merrill, *Department of Energy, Washington, D.C.*

5D2 BOUNDARY CONDITIONS FOR ELECTRON TEMPERATURE IN A THERMIONIC CONVERTER
S.H. Lam, *Princeton University, Princeton, New Jersey*

5D3 ANALYSES OF ADVANCED THERMIONIC CONVERTERS
J. McVey, L.K. Hansen and E.J. Britt, *Rasor Associates, Inc., Sunnyvale, California*

5D4 THERMIONICS TRANSPORT PHENOMENA IN THERMIONIC CONVERTER
M. Stoenescu, T. Smith, D. Smith, P. Heinicke and S. Channon, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*

5D5 EMISSION AND SPACE CHARGE EFFECTS AT CESIATED ELECTRODES
L.K. Hansen and H.Y. Woo, *Rasor Associates, Inc., Sunnyvale, California*

5D6 SURFACE ANALYSIS TECHNIQUES FOR INVESTIGATING BASIC MECHANISMS IN LOW WORK FUNCTION SURFACES AT LOW AND MODERATE TEMPERATURES
A. Shih and G.A. Haas, *Naval Research Laboratory, Washington, D.C.*

5D7 ATOM AND ELECTRON VAPORIZATION RATES FROM GdB₄
E. Storms and B. Mueller, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*

5D8 WORK FUNCTION DETERMINATION OF LANTHANUM-BORON AND YTTRIUM-BORON MATERIALS BY THERMIONIC EMISSION MICROSCOPY
J. Jaskie and D. Jacobson, *Arizona State University, Tempe, Arizona*

5D9 CESIATED EMISSION OF LANTHANUM HEXABORIDE COMPOUNDS
M. Tay and D. Jacobson, *Arizona State University, Tempe, Arizona*

WEDNESDAY, JUNE 6, 1979
9:00 A.M., AMPHITHEATRE C

ORAL SESSION 5E -- FIELD REVERSED RING CONFIGURATIONS II
SESSION CHAIRMAN: W.M. TURNER

5E1 OPERATING PARAMETERS FOR A MOVING PLASMOID HEATER (MPH) REACTOR CONCEPT
J.D. Galambos, R.E. Olson, J.G. Gilligan and G.H. Miley, *University of Illinois, Urbana, Illinois*

5E2 ELONGATED FIELD REVERSED EQUILIBRIA
A. Kadish, *Department of Energy, Washington, D.C.*

5E3-4 INVITED PAPER: STATUS OF FIELD REVERSED EXPERIMENTS - FRX
R.K. Linford, W.T. Armstrong, J. Lipson, D.A. Platts and E.G. Sherwood, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*

5E5 COMPARISON OF THEORETICAL AND EXPERIMENTAL RESULTS ON THE SELF FIELD RESONANCE INSTABILITY OF STRONG ELECTRON RINGS IN IOFFE QUADRUPOLE MIRROR FIELDS
S.C. Luckhardt, M.I.T., *Cambridge, Massachusetts*, H.H. Fleischmann, *Cornell University, Ithaca, New York*

5E6 PARTICLE ORBITS IN FIELD REVERSED CONFIGURATIONS: ERGODIC OR NOT?
D.A. Larrabee and R.V. Lovelace, *Cornell University, Ithaca, New York*

5E7 THEORY OF EQUILIBRIUM STATES OF FIELD REVERSED PLASMAS
H.L. Berk, J.K. Boyd and B. McNamara, *Lawrence Livermore Laboratory, Livermore, California*

5E8 LINEARIZED THREE-DIMENSIONAL SIMULATION CODES APPLICABLE TO STABILITY OF FIELD REVERSED PLASMA CONFIGURATIONS
J.A. Byers, Y. Matsuda and J. Stewart, *Lawrence Livermore Laboratory, Livermore, California*, A. Friedman, *University of California, Berkeley, California*

5E9 STABILITY CONSIDERATIONS IN FIELD-REVERSED MIRROR REACTORS
E.C. Morse, Q.T. Fang, R.E. Olson, J.G. Gilligan and G.H. Miley, *University of Illinois, Urbana, Illinois*

5E10 ANOMALOUS DIFFUSION CALCULATIONS IN FIELD REVERSED CONFIGURATIONS
S. Hamasaki and N.A. Krall, *Science Applications Inc., La Jolla, California*

5E11 DIAGNOSTIC SYSTEMS IN FRX
J. Lipson, W.T. Armstrong, R.K. Linford, D.A. Platts and E.G. Sherwood, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*

WEDNESDAY, JUNE 6, 1979
9:00 A.M., ROOM 2403

POSTER SESSION 5P -- PLASMA HEATING

5P1 HIGH POWER HEATING AND PROPAGATION USING FAST MAGNETOSONIC WAVES IN THE WISCONSIN TOKAPOLE II
A.P. Biddle and J.C. Sprott, *University of Wisconsin, Madison, Wisconsin*

5P2 LOWER HYBRID-TOKAMAK TRANSPORT CODE,
R. Englade, T. Antonsen, M. Porkolab and B. Coppi, *MIT, Cambridge, Massachusetts*

5P3 INJECTION OF A DEFLAGRATION GUN PLASMA INTO A TOROIDAL MAGNETIC FIELD
S. Robertson, J. Schneider and F. Wessel, *University of California, Irvine, California*, C.N. Chang, D.Y. Cheng and P.P. Tripathi, *University of Santa Clara, Santa Clara, California*

5P4 STEADY STATE CROSS FIELD INJECTION INTO A SIMPLE MIRROR
M. Wickham, H. Bohmer and N. Rynn, *University of California, Irvine, California*

5P5 AN rf-HEATED PROOF OF PRINCIPLE ELMO BUMPY TORUS (EBT)
J.H. Mullen, W.B. Ard, R.J. Kashuba and R.E. Juhala, *McDonnell Douglas Corporation, St-Louis, Missouri*, J.C. Hosea, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*

5P6 WALL EFFECTS ON THE ABSORPTION OF ELECTRON CYCLOTRON WAVES IN ELMO BUMPY TORUS (EBT) PLASMA
T. Uckan, *Oak Ridge National Laboratory, Oak Ridge, Tennessee*

WEDNESDAY, JUNE 6, 1979
9:00 A.M., ROOM 2405

POSTER SESSION 5Q -- PLASMAS FOR FUSION RESEARCH I

- 5Q1 REVERSED FIELD PINCH BURN DYNAMICS
R.A. Mebel and G.H. Miley, *University of Illinois, Urbana, Illinois*,
R.W. Moses, *Los Alamos Scientific Laboratory, Los Alamos, New Mexico*
- 5Q2 THE ROLE OF FLUCTUATION-INDUCED TRANSPORT IN A TOROIDAL PLASMA WITH
STRONG RADIAL ELECTRIC FIELDS
J.R. Roth and W.M. Krawczonek, *NASA Lewis Research Center, Cleveland,
Ohio*, E.J. Powers, J.Y. Hong and Y.C. Kim, *University of Texas, Austin,
Texas*
- 5Q3 NUMERICAL SIMULATION OF THE INDUCTIVE VOLTAGE MULTIPLICATION IN IMPLO-
DING PLASMAS
E. Goldman and G. Dahlbacka, *Physics International Co., San Leandro,
California*
- 5Q4 TIME APPROACH TO Z-PINCH EQUILIBRIUM
T.A. Oliphant and J.H. Brownell, *Los Alamos Scientific Laboratory, Los
Alamos, New Mexico*
- 5Q5 AN OVERVIEW OF THE ZT-40 REVERSED FIELD PINCH EXPERIMENT
J.N. Downing, D.A. Baker, G.P. Boicourt, J.N. Di Marco, A. Haberstich
and K.S. Thomas, *Los Alamos Scientific Laboratory, Los Alamos, New
Mexico*
- 5Q6 OPERATION OF PRETEXT TOKAMAK
J.F. Benesch, R.D. Bengtson, S.A. Eckstrand, R.F. Gandy, K.W. Gentle,
T. Kochanski, S.H. Lin, P.E. Phillips, D.M. Thomas and P. Wildi, *Uni-
versity of Texas at Austin, Austin, Texas*
- 5Q7 TRAPPED PARTICLE BEHAVIOR IN STELLARATORS AND TORSATRONS
J.A. Derr and J.L. Shohet, *University of Wisconsin, Madison,
Wisconsin*

WEDNESDAY, JUNE 6, 1979
9:00 A.M., ROOM 2407

POSTER SESSION SR -- PLASMA WAVES, INSTABILITIES AND ANTENNAS III

- 5R1 PROPAGATION OF A SURFACE WAVE ON A PLASMA COLUMN AT ATMOSPHERIC PRES-
SURE
M. Moisan, R. Pantei and J. Hubert, *Université de Montréal, Montréal,
Québec, Canada*
- 5R2 PLASMA EXPERIMENTS WITH THE PROPOSED CANADIAN WAVE INJECTION FACILITY
ON SHUTTLE/SPACELAB
H.G. James and D.B. Muldrew, *Communications Research Center, Ottawa,
Ontario, Canada*
- 5R3 THE THREE-WAVE PARAMETRIC-DECAY INSTABILITY IN PLASMAS WITH NONUNIFORM
COUPLING AND/OR WAVENUMBER MISMATCH GRADIENT
V. Fuchs and M.M. Shoucri, *Institut de Recherche de L'Hydro-Québec,
Varenes, Québec, Canada*, T.W. Johnston and J.P. Matte, *INRS-Ener-
gie, Varenes, Québec, Canada*
- 5R4 NEAR FIELD AND DAMPING EFFECTS ON THE RADIATION OF ION ACOUSTIC WAVES
FROM ANTENNAS
Y. Nakamura and Y. Nomura, *University of Tokyo, Tokyo, Japan*, K.E.
Longren, *University of Iowa, Iowa City, Iowa*
- 5R5 IMPEDANCE AND DISPERSION CHARACTERISTICS OF AN RF-HELIX CONTAINING A
PLASMA COLUMN
B.B. Truong and M. Nachman, *Ecole Polytechnique de Montréal, Montréal,
Québec, Canada*
- 5R6 MULTIPOLE APPROXIMATIONS FOR THE PLASMA DISPERSION FUNCTION Z
P. Martin and G. Donoso, *Universidad Simon Bolivar, Caracas, Vene-
zuela*, J. Zamudio-Cristi, *Universidad Nacional Abierta, Caracas, Ve-
nezuela*

WEDNESDAY, JUNE 6, 1979
2:00 P.M., AMPHITHEATRE A

ORAL SESSION 6A -- PLASMA WAVES, INSTABILITIES AND ANTENNAS
SESSION CHAIRMAN: E.J. POWERS

- 6A1 RESONANCE CONE BEHAVIOR IN AN INHOMOGENEOUS MAGNETOPLASMA
T. Ohnuma, *Tohoku University, Sendai, Japan*
- 6A2 A FREQUENCY LOCKING MAGNETRON-CAVITY SYSTEM FOR PLASMA EXPERIMENTS
P.H. Probert and J.L. Shohet, *University of Wisconsin, Madison,
Wisconsin*
- 6A3 HIGH FREQUENCY MODES EXCITATION IN A MAGNETIZED PLASMA COLUMN
A.A. Balashov, S. Ghosh and K.S. Golovanivsky, *Patrice Lumumba
University, Moscow, USSR*
- 6A4 SUPPRESSION OF ELECTRON COLLECTION BY LARGE-AMPLITUDE RF VOLTAGE
ON A CYLINDRICAL ELECTRODE IN A COLLISIONLESS PLASMA
J.G. Laframboise, R.A. Koehler and J. Rubinstein, *York University,
Toronto, Ontario, Canada*
- 6A5 THE CYLINDRICAL ANTENNA IN A PLASMA MEDIUM: A CRITICAL COMPARISON OF
EXPERIMENT WITH THEORY
D. Preis, M.J. Miller and R.W.P. King, *Tufts University, Medford,
Massachusetts*
- 6A6 CYCLOTRON MASER AMPLIFICATION OF MICROWAVES IN A SPATIALLY NONLINEAR
ELECTROSTATIC FIELD
L.R. Barnett, *University of Tennessee, Knoxville, Tennessee*

- 6A7 INTEGRATION TIME FOR CROSS-POWER SPECTRUM ANALYZER
K.J. Harker, F.W. Crawford and D.B. Illic, *Stanford University,
Stanford, California*
- 6A8 ON IMPULSE RESPONSE OF PLASMA HALF-SPACE MOVING NORMAL TO THE INTERFACE -
I: FORMULATION OF THE SOLUTION
D. Kalluri and R.C. Prasad, *Birla Institute of Technology, Ranchi,
India*
- 6A9 ON IMPULSE RESPONSE OF PLASMA HALF-SPACE MOVING NORMAL TO THE INTERFACE -
II: RESULTS
D. Kalluri and R.C. Prasad, *Birla Institute of Technology, Ranchi,
India*
- 6A10-11 INVITED PAPER: EXPERIMENTAL OBSERVATION AND THEORETICAL DESCRIPTION
OF A NEW PLASMA EMISSION AT THE GEOMETRICAL MEAN PLASMA FREQUENCY
I. Alexeff and J.R. Roth, *University of Tennessee, Knoxville, Tennessee*,
R. Mallavarpu, *Reynolds Metals, Co., Sheffield, Alabama*

WEDNESDAY, JUNE 6, 1979
2:00 P.M., AMPHITHEATRE F

ORAL SESSION 6B -- COMPUTER APPLICATIONS TO PLASMA SCIENCE II
SESSION CHAIRMAN: I.R. LINDEMUTH

- 6B1 TMX DATA BASE MANAGEMENT SYSTEM
W.F. Cummins and C.P. Parrish, *Lawrence Livermore Laboratory,
Livermore, California*
- 6B2 DACCL: A DATA ACQUISITION AND CONTROL COMMAND LANGUAGE FOR PLASMA
PHYSICISTS
L. Hill, *Princeton Plasma Physics Laboratory, Princeton, New Jersey*
and B.C. Sangster, *Rutgers University, Piscataway, New Jersey*
- 6B3-4 INVITED PAPER: COMPUTER SPECIFICATIONS: TRIUMPH AND TRAGEDY
R.H. Wyman, *Lawrence Livermore Laboratory, Livermore, California*
- 6B5 NUMERICAL SIMULATION OF INTERFEROGRAMS FOR LASER-PRODUCED PLASMAS
J.P. Matte, B. Nickerson and T.W. Johnston, *INRS-Energie, Varenes,
Québec, Canada*
- 6B6 A HIGH EFFICIENCY FREE ELECTRON LASER
A.T. Lin and J.M. Dawson, *University of California, Los Angeles,
California*
- 6B7 COMPUTER SIMULATION OF FEL AMPLIFIERS
S.B. Segall, *KMS Fusion, Ann Arbor, Michigan*
- 6B8 COMPUTER SIMULATION OF THE GROWTH OF THE UNSTABLE CYCLOTRON WAVE
BY SLOW WAVE STRUCTURES
G.I. Bourianoff, *Austin Research Associates, Austin, Texas*
- 6B9 SUPERAVERAGE, AN ORBIT-AVERAGED PARTICLE SIMULATION CODE
R.P. Freis, B.I. Cohen and T.A. Brengle, *Lawrence Livermore Laboratory,
Livermore, California*
- 6B10 COUPLING OF A 1-d DIODE CODE TO AN EXTERNAL INDUCTIVE CIRCUIT
A. Sternlieb, A. Goldstein and R. Lee, *University of Maryland, College
Park, Maryland*
- 6B11 OPTIMIZATION CALCULATIONS FOR THE FX-75 RELATIVISTIC ELECTRON BEAM
ACCELERATOR
R.L. Copeland and J.L. Adamski, *Boeing Aerospace, Co., Seattle,
Washington*

WEDNESDAY, JUNE 6, 1979
2:00 P.M., AMPHITHEATRE G

ORAL SESSION 6C -- INTENSE ELECTRON AND ION BEAMS III
SESSION CHAIRMAN: W. KUSWA

- 6C1-2 INVITED PAPER: RELATIVISTIC ELECTRON BEAM TARGET EXPERIMENTS
J.S.F. Chang, *Sandia Laboratories, Albuquerque, New Mexico*
- 6C3 COUPLING OF BEAM ENERGY TO AN EXPANDING TARGET
M.A. Sweeney, *Sandia Laboratories, Albuquerque, New Mexico*
- 6C4 PROGRESS IN THE DEVELOPMENT OF A FLASH X-RADIOGRAPHY SYSTEM FOR REB-
DRIVEN TARGET STUDIES
D.L. Fehl, J. Chang and G.W. Kuswa, *Sandia Laboratories, Albuquerque,
New Mexico*
- 6C5 FLASH X-RADIOGRAPHY STUDIES OF REB DRIVEN SPHERICAL TARGET IMPLOSIONS
J. Chang, D.L. Fehl and G.W. Kuswa, *Sandia Laboratories, Albuquerque,
New Mexico*
- 6C6 AN EVIDENCE OF ANORMALOUS INTERACTION BETWEEN FOCUSED REB AND TARGET
K. Imasaki, S. Miyamoto, S. Higaki, S. Nakai, K. Nishihara and
C. Yamanaka, *Osaka University, Osaka, Japan*
- 6C7 ION BEAM INDUCED MAGNETIC FIELDS IN EVACUATED CAVITIES
A. Goldstein, JAVCOR, *Alexandria, Virginia*, and A.T. Drobot, *Science
Applications, Inc., McLean, Virginia*
- 6C8 CURRENT INSTABILITY IN ELECTRON BEAM DIODES WITH DIELECTRIC CATHODES
M.T. Buttram, *Sandia Laboratories, Albuquerque, New Mexico*
- 6C9 SUPPRESSION OF ELECTRON EMISSION IN A VACUUM FOR SHORT PULSES
R.S. Clark, *Sandia Laboratories, Albuquerque, New Mexico*
- 6C10 THE VIRTUAL CATHODE AS A MICROWAVE GENERATOR
D.J. Sullivan, *Air Force Weapons Laboratory, Kirtland Air Force Base,
New Mexico*
- 6C11 DYNAMICS OF MAGNETIC INSULATION IN 1-D GEOMETRIES
E.M. Waisman, D.E. Parks, I. Katz and P.G. Steen Systems, *Science
and Software, La Jolla, California*

6C12 PRODUCTION AND ENERGY ANALYSIS OF AMPERE-LEVEL POSITRON CURRENTS
GENERATED BY AN IREB
C.B. Wharton and G. Ferrentino, Cornell University, Ithaca, New York

WEDNESDAY, JUNE 6, 1979
2:00 P.M., ROOM 2403

POSTER SESSION 6P -- LASER-PLASMA INTERACTIONS III

WEDNESDAY, JUNE 6, 1979
2:00 P.M., AMPHITHEATRE B

ORAL SESSION 6D -- THERMIONICS AND PLASMA DIODES II
SESSION CHAIRMAN: O.S. MERRILL

- 6D1 THE THERMIONIC EMITTING PROPERTIES OF COADSORBED ZIRCONIUM AND OXYGEN ON THE W(100) CRYSTAL FACE
L.R. Danielson and L.W. Swanson, Oregon Graduate Center, Beaverton, Oregon
- 6D2 INVESTIGATIONS OF NEGATIVE CESIUM ION SPECIES IN A SIMULATED THERMIONIC DIODE
D.G. Kuehn and L.M. Chanin, University of Minnesota, Minneapolis, Minnesota
- 6D3 THERMIONIC CONVERTERS WITH METAL OXIDE COLLECTORS
D.B. Goodale, M. Saunders and D. Lieb, Thermo Electron Corporation, Waltham, Massachusetts
- 6D4 SIMPLIFIED ANALYSIS OF PARTICLE THERMIONIC CONVERTERS
C.C. Wang, Thermo Electron Corporation, Waltham, Massachusetts
- 6D5 PARTICLE THERMIONIC CONVERTER EXPERIMENTS
P.E. Oettinger, G. Stark and F.N. Huffman, Thermo Electron Corporation, Waltham, Massachusetts
- 6D6 INVESTIGATIONS OF A PULSED TRIODE THERMIONIC CONVERTER
C. Lee and P.E. Oettinger, Thermo Electron Corporation, Waltham, Massachusetts
- 6D7 CESIUM PLASMA CONDUCTIVITY ENHANCEMENT IN THE ADVANCED THERMIONIC ENERGY CONVERTER
C.N. Manikopoulos, Rutgers University, Piscataway, New Jersey
- 6D8 HEAT PIPE DEVELOPMENT FOR PLASMA-RELATED APPLICATIONS
W.A. Ranken, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 6D9 POST-BREAKDOWN BULK PLASMA OSCILLATIONS IN GOLD-DOPED SILICON DOUBLE INJECTION DEVICES
B. Mantha and H.T. Henderson, University of Cincinnati, Cincinnati, Ohio
- 6D10 COMMENTS ON TEC TRENDS
J.F. Morris, NASA Lewis Research Center, Cleveland, Ohio

WEDNESDAY, JUNE 6, 1979
2:00 P.M., AMPHITHEATRE C

ORAL SESSION 6E -- ARC SCIENCE
SESSION CHAIRMAN: J. AUGIS

- 6E1 A VORTEX-STABILIZED ARC HIGH INTENSITY LIGHT SOURCE
S.Y.K. Tam, B.W. Gibbs and G. Riedel, MPB Technologies, Inc., Ste-Anne-de-Bellevue, Québec, Canada
- 6E2 ENERGY BALANCE FOR A D.C. PLASMA TORCH
A. Bokhari and M.I. Boulos, Université de Sherbrooke, Sherbrooke, Québec, Canada
- 6E3 ANODE PHENOMENA IN A HIGH CURRENT LOW-PRESSURE DC-DISCHARGE
H. Hugel, DFVLR, Stuttgart, West Germany
- 6E4 DYNAMIC MEASUREMENTS OF EMISSION SITE PARAMETERS
H. Mercure and M.G. Drouet, Institut de recherche de l'Hydro-Québec, Varennes, Québec, Canada
- 6E5-6 INVITED PAPER: REVIEW OF ANODE AND CATHODE PHENOMENA IN VACUUM ARCS
C.W. Kimbitt, Westinghouse Electric Corporation, Pittsburg, Pennsylvania
- 6E7 PLASMA EXPANSION AND ION FLUX FROM THE CATHODE SPOT IN A VACUUM ARC
M.G. Drouet, Institut de recherche de l'Hydro-Québec, Varennes, Québec, Canada
- 6E8 LOCAL CURRENT AND LIGHT EMISSIONS AT THE COPPER CATHODE OF A MAGNETICALLY DRIVEN ARC
P. Dancer, M.G. Drouet, P. Kieffer and H. Mercure, Institut de recherche de l'Hydro-Québec, Varennes, Québec, Canada
- 6E9 HEAT TRANSPORT IN ARC ELECTRODES
L.E. Gettel, F.L. Curzon and R.A. Nodwell, University of British Columbia, Vancouver, British Columbia
- 6E10 ELECTRODE PROCESSES OCCURRING IN A METALLIC-GASEOUS D.C. ELECTRIC ARC DISCHARGE IN VARIOUS GASES
C.H. Leigh and G. Vachon, Institut de recherche de l'Hydro-Québec, Varennes, Québec, Canada

- 6P1 A DUAL TREATMENT OF SUPRATHERMAL ELECTRON TRANSPORT IN LASER FUSION STUDIES
C. Jablon and J. Virmont, Université Paris-Sud, Orsay, France
- 6P2 ANALYSIS OF THE Z DEPENDENCE OF LASER GENERATED SUPRATHERMAL ELECTRON TEMPERATURE
M.D. Rosen and K.G. Estabrook, Lawrence Livermore Laboratory, Livermore, California
- 6P3 RAREFACTION SHOCK STRUCTURE
D. Mitrovich, KMS Fusion, Inc., Ann Arbor, Michigan
- 6P4 THE MOMENT EQUATIONS AND MAGNETIC FIELD GENERATION INCLUDING PONDEROMOTIVE LASER SOURCE TERMS IN A COLLISIONAL PLASMA
I.P. Shkarofsky, MPB Technologies Inc., Ste-Anne de Bellevue, Québec, Canada
- 6P5 GENERATION OF MAGNETIC FIELDS IN MICROWAVE EXPERIMENTAL SIMULATIONS OF LASER FUSION INTERACTIONS
M. Rhodes, A.Y. Lee, N.C. Luhmann, Jr., S.P. Obenschain and Y. Nishida, University of California, Los Angeles, California
- 6P6 PLASMAS FOR HIGH-PRESSURE GAS LASERS PRODUCED BY FOCUSING A CO₂-TEA LASER BEAM WITH AXICON LENSES
G. Roy, Y. D'Astous, M. Blanchard and R. Tremblay, Université Laval, Ste-Foy, Québec, Canada
- 6P7 THE NATURE OF LASER DRIVEN BREAKDOWN-HEATING WAVES IN MAGNETIZED HYDROGEN
D.W. Scudder, Z.A. Pietrzyk and G.C. Vlases, University of Washington, Seattle, Washington
- 6P8 SATURATED BACKSCATTER AND POLARIZATION INDEPENDENT SIDESCATTER FROM PLASMA TARGET
M.J. Herbst, C.E. Clayton and F.F. Chen, University of California, Los Angeles, California

WEDNESDAY, JUNE 6, 1979
2:00 P.M., ROOM 2405

POSTER SESSION 6Q -- PLASMAS FOR FUSION RESEARCH II

- 6Q1 ELECTRON TEMPERATURE AND DENSITY MEASUREMENTS FOR SCYLLA IV-P, AN END-PLUGGED, 5-m LINEAR THETA PINCH
R.R. Bartsch, R.J. Comisso, C.A. Ekdahl, K.B. Freese, K.F. McKenna, R.E. Semon and T. Zaugg, Los Alamos Scientific Laboratory, Los Alamos, New Mexico
- 6Q2 DESIGN OF A LINUS-PLASMA COMPRESSION EXPERIMENT
P.J. Turchi, R.L. Burton, A.L. Cooper, and D.J. Jenkins, Naval Research Laboratory, Washington, D.C., L. Hoffman, G.C. Vlases and T. Churchill, Mathematical Sciences Northwest, Inc., Seattle, Washington
- 6Q3 ON THE ADIABATIC INVARIANT J IN AXISYMMETRIC CONFINEMENT CONFIGURATIONS
R.M.O. Galvao, E. Wilner and S.W. Simpson, Universidade de Sao Paulo, Sao Paulo, Brasil
- 6Q4 ABLATIVE RESPONSE OF MASS-LIMITED TARGETS AT 1.064 μm
J.P. Anthes, K.M. Gilbert, M.A. Palmer and M.K. Matzen, Sandia Laboratories, Albuquerque, New Mexico
- 6Q5 DEVELOPMENT AND CHARACTERIZATION OF A PLASMA RAIL GUN
L.P. Bradley and E.L. Orham, Lawrence Livermore Laboratory, Livermore, California
- 6Q6 DEFLAGRATION GUN SOURCE FOR PLASMA INJECTION INTO SURMAC
P.P. Tripathi, C.N. Chang and Dah Yu Cheng, University of Santa Clara, Santa Clara, California
- 6Q7 PREVENTING AZIMUTHAL INSTABILITY IN A COAXIAL GUN PLASMA
C.N. Chang, P.P. Tripathi, Dah Yu Cheng, University of Santa Clara, Santa Clara, California

WEDNESDAY, JUNE 6, 1979
2:00 P.M., ROOM 2407

POSTER SESSION 6R -- SPACE PLASMA AND SUPER-HEAVY ELEMENTS

- 6R1 PLASMA PHYSICS OF SOME COSMIC RAY TRANSPORT PROBLEMS WITHIN THE HELIOSPHERE
H.S. Ahluwalia, University of New Mexico, Albuquerque, New Mexico
- 6R2 VORTEX MOTION AND TURBULENCE IN COLLISIONLESS PLASMA IN THE FAR MAGNETOSPHERE OF THE EARTH
A. Prakash, Georgetown University, Washington, D.C.
- 6R3 NEW TECHNOLOGY USING FUSION TO BULK-PRODUCE STABLE TRANS-URANIUM SUPER-HEAVY ELEMENTS
S.M. Ayub, Frere Town, Karachi, Pakistan