

CONTENTS OF VOLUME 2

HELICAL SYSTEMS (Session C1)

Edge plasma control by a local island divertor in the Compact Helical System (IAEA-CN-64/C1-2)	3
<i>A. Komori et al.</i>	
Effects of ECH on NBI plasma in Heliotron E (IAEA-CN-64/C1-3)	13
<i>T. Obiki et al.</i>	
High ion temperatures and high beta in W7-AS (IAEA-CN-64/C1-4)	27
<i>M. Kick et al.</i>	
Experimental study of plasma confinement and heating efficiency through potential profile measurements with a heavy ion beam probe in the Compact Helical System (IAEA-CN-64/C1-5)	41
<i>A. Fujisawa et al.</i>	

ALTERNATIVE SYSTEMS EXPERIMENTS (Session C2)

Stability and additional heating properties of spherical tokamak plasmas on START (IAEA-CN-64/C2-1)	57
<i>M.R. O'Brien et al.</i>	
Investigation of the effect of resistive MHD modes on spherical torus performance in CDX-U (IAEA-CN-64/C2-2)	71
<i>M. Ono et al.</i>	
Reducing and measuring fluctuations in the MST RFP: Enhancement of energy confinement and measurement of the MHD dynamo (IAEA-CN-64/C2-3).....	83
<i>D.J. Den Hartog et al.</i>	
Improved high theta mode and dynamo activity in a reversed field pinch on TPE-1RM20 (IAEA-CN-64/C2-4)	95
<i>Y. Hirano et al.</i>	
ECRH experiments in a hot ion mode of the GAMMA 10 tandem mirror and a theoretical study of plug potential formation mechanisms (IAEA-CN-64/C2-6).....	105
<i>T. Saito et al.</i>	

HELICAL SYSTEMS AND ALTERNATIVE SYSTEMS (Poster Session CP)

High density ECRH and shear related confinement with ECCD in W7-AS (IAEA-CN-64/CP-1)	119
<i>V. Erckmann et al.</i>	

EDITORIAL NOTE

The Proceedings have been edited by the editorial staff of the IAEA to the extent considered necessary for the reader's assistance. The views expressed remain, however, the responsibility of the named authors or participants. In addition, the views are not necessarily those of the governments of the nominating Member States or of the nominating organizations.

Although great care has been taken to maintain the accuracy of information contained in this publication, neither the IAEA nor its Member States assume any responsibility for consequences which may arise from its use.

The use of particular designations of countries or territories does not imply any judgement by the publisher, the IAEA, as to the legal status of such countries or territories, of their authorities and institutions or of the delimitation of their boundaries.

The mention of names of specific companies or products (whether or not indicated as registered) does not imply any intention to infringe proprietary rights, nor should it be construed as an endorsement or recommendation on the part of the IAEA.

The authors are responsible for having obtained the necessary permission for the IAEA to reproduce, translate or use material from sources already protected by copyrights.

Material prepared by authors who are in contractual relation with governments is copyrighted by the IAEA, as publisher, only to the extent permitted by the appropriate national regulations.

Comparative studies of stellarator and tokamak transport (IAEA-CN-64/CP-2)	127	Acceleration of a field reversed configuration for central fueling of ITER (IAEA-CN-64/CP-17)	237
<i>U. Stroth et al.</i>		<i>J.T. Slough, A.L. Hoffman</i>	
A study on density profile and density limit of NBI plasmas in the Compact Helical System (IAEA-CN-64/CP-3)	135	Recent results of the helicity injected tokamak experiment (IAEA-CN-64/CP-18)	243
<i>S. Morita et al.</i>		<i>T.R. Jarboe et al.</i>	
Resistivity effects on the critical pressure gradient for the resistive interchange modes in Heliotron E (IAEA-CN-64/CP-4)	143	Comparative study of compact toroid plasmas formed by induction and reconnection (IAEA-CN-64/CP-19)	253
<i>H. Zushi et al.</i>		<i>M. Yamada et al.</i>	
Dynamics of ion temperature in Heliotron-E (IAEA-CN-64/CP-5)	151	Experimental observation of direct ion heating/acceleration during merging formation of an FRC (IAEA-CN-64/CP-20)	263
<i>K. Ida et al.</i>		<i>Y. Ono et al.</i>	
Orbit effects of energetic particles on the reachable β value and the radial electric field in NBI and ECR heated heliotron plasmas (IAEA-CN-64/CP-6)	157	Progress in dense Z-pinch research at Imperial College (IAEA-CN-64/CP-21)	275
<i>S. Murakami et al.</i>		<i>M.G. Haines et al.</i>	
Fluctuation and internal current studies in the H-1 heliac (IAEA-CN-64/CP-7)	167	Plasma confinement and stability studies in the gas dynamic trap experiment (IAEA-CN-64/CP-22)	283
<i>B.D. Blackwell et al.</i>		<i>A.V. Anikeev et al.</i>	
Improvement of collisionless particle confinement in $\ell = 1$ helical systems (IAEA-CN-64/CP-8)	175	Six beam spherical compression of plasma focus guns (IAEA-CN-64/CP-23)	293
<i>M. Yokoyama et al.</i>		<i>A. Thein, Pe Myint</i>	
Magnetic configuration scans in the TJ-I Upgrade torsatron (IAEA-CN-64/CP-9)	183	Profile control for an alternative spherical tokamak (IAEA-CN-64/CP-24)	297
<i>A. Ascasíbar et al.</i>		<i>S. Sinman, A. Sinman</i>	
Resistive shell operation and confinement in the EXTRAP T2 RFP (IAEA-CN-64/CP-11)	193	High recycling in W7-AS island divertor configurations (IAEA-CN-64/CP-25)	307
<i>J.R. Drake et al.</i>		<i>P. Grigull et al.</i>	
Influence of external helical perturbations on RFP dynamics (IAEA-CN-64/CP-12)	201	Edge transport barrier and edge turbulence during H-mode operation in the W7-AS stellarator (IAEA-CN-64/CP-26)	315
<i>S. Masamune et al.</i>		<i>M. Hirsch et al.</i>	
MHD processes associated with shear reversal: An experimental approach from the ultra-low-q regime (IAEA-CN-64/CP-13)	207	TRANSPORT THEORY (Session D1)	
<i>N. Inoue et al.</i>		Enhanced reversed shear bifurcation in tokamak plasmas (IAEA-CN-64/D1-1)	325
Characteristics of divertor RFP plasmas in the TPE-2M (IAEA-CN-64/CP-14)	213	<i>A. Das et al.</i>	
<i>K. Hattori et al.</i>		Turbulence and transport in enhanced confinement regimes of tokamaks: Simulation and theory (IAEA-CN-64/D1-2)	335
Helicity injection experiments and turbulence measurements on the Tokyo Spherical Tokamak (IAEA-CN-64/CP-15)	223	<i>T.S. Hahm et al.</i>	
<i>H. Toyama et al.</i>		Developments in the theory of core and edge plasma transport barrier dynamics and control (IAEA-CN-64/D1-3)	347
Heating of a plasma with field reversed configuration by a fast rising magnetic pulse (IAEA-CN-64/CP-16)	229	<i>V.B. Lebedev et al.</i>	
<i>S. Okada et al.</i>			

Turbulence and the formation of transport barriers in finite β tokamaks (IAEA-CN-64/D1-4)	361
<i>B.N. Rogers et al.</i>	
First principles calculations of tokamak energy transport (IAEA-CN-64/D1-5)	371
<i>M. Kotschenreuther et al.</i>	
A comprehensive gyro-Landau-fluid transport model (IAEA-CN-64/D1-6)	385
<i>R.E. Waltz et al.</i>	

MHD AND ENERGETIC PARTICLE THEORY (Session D2)

Evolution of global modes and magnetic reconnection in fusion burning plasmas (IAEA-CN-64/D2-1)	397
<i>B. Coppi et al.</i>	
3D simulation studies of tokamak plasmas using MHD and extended-MHD models (IAEA-CN-64/D2-2)	411
<i>W. Park et al.</i>	
Vlasov-MHD and particle-MHD simulations of the toroidal Alfvén eigenmode (IAEA-CN-64/D2-3)	423
<i>Y. Todo et al.</i>	
Kinetic inertia and ion Landau damping for BAE and resistive wall modes in tokamaks (IAEA-CN-64/D2-4)	431
<i>A. Bondeson, M.S. Chu</i>	
Alpha particle transport due to Alfvén wave excitation (IAEA-CN-64/D2-5)	439
<i>H.L. Berk et al.</i>	
Recent progress in linear and nonlinear studies of toroidal Alfvén eigenmodes (IAEA-CN-64/D2-6)	453
<i>G.Y. Fu et al.</i>	

DIVERTOR EDGE PHYSICS AND ALTERNATIVES (Session D3)

Modelling of radiation distribution and impurity divertor compression in ASDEX Upgrade (IAEA-CN-64/D3-1)	465
<i>R. Schneider et al.</i>	
Energy and particle transport modelling with a time dependent combined core and edge transport code (IAEA-CN-64/D3-3)	477
<i>JET Team</i>	
Novel mechanism of ion cyclotron emission in tokamaks (IAEA-CN-64/D3-5)	487
<i>Ya.I. Kolesnichenko et al.</i>	
Ballooning modes in heliotrons/torsatrons (IAEA-CN-64/D3-6)	497
<i>N. Nakajima et al.</i>	

THEORY (Poster Session DP)

Optimization of negative central shear discharges in shaped cross-sections (IAEA-CN-64/DP-1)	509
<i>A.D. Turnbull et al.</i>	
Resistive wall stabilization by toroidal rotation effects of partial wall configurations and aspect ratio (IAEA-CN-64/DP-2)	523
<i>D.J. Ward</i>	
Operational limits for advanced tokamaks (IAEA-CN-64/DP-3)	529
<i>J.W. Connor et al.</i>	
Kinetic Alfvén eigenmodes in a hot tokamak plasma (IAEA-CN-64/DP-4)	537
<i>A. Jaun et al.</i>	
Resonant excitation of Alfvén modes by energetic particles in tokamaks (IAEA-CN-64/DP-5)	543
<i>S. Briguglio et al.</i>	
Formation of transport barriers (IAEA-CN-64/DP-6)	551
<i>V. Rozhansky et al.</i>	
Theory based transport modelling of tokamak temperature and density profiles (IAEA-CN-64/DP-7)	559
<i>G. Bateman et al.</i>	
Drift wave transport simulations of JET gyro-radius scaling experiments (IAEA-CN-64/DP-8)	567
<i>H. Nordman et al.</i>	
Nonlinear aspects of the neoclassical theory of plasma rotation and equilibrium bifurcations (IAEA-CN-64/DP-9)	573
<i>A.L. Rogister</i>	
Effect of weak/negative magnetic shear and plasma shear rotation on self-organized critical gradient transport in toroidal plasmas — Formation of internal transport barrier (IAEA-CN-64/DP-10)	581
<i>Y. Kishimoto et al.</i>	
Control of transport barriers and the physics of the transport β limit (IAEA-CN-64/DP-11)	593
<i>A. Fukuyama et al.</i>	
Energy and particle transport modeling for the tokamak edge/SOL region (IAEA-CN-64/DP-12)	601
<i>T.D. Rognlien et al.</i>	
Tokamak edge physics and modeling (IAEA-CN-64/DP-13)	609
<i>P.J. Catto et al.</i>	
Effect of high Z impurities on H-L transition in ITER (IAEA-CN-64/DP-14)	619
<i>V.A. Abramov, A.R. Polevoj</i>	

Integrated impurity model for actively cooled plasma facing components (IAEA-CN-64/DP-15)	625
<i>J. Hogan et al.</i>	
DEGAS 2 neutral transport modeling of high density, low temperature plasmas (IAEA-CN-64/DP-16)	633
<i>D.P. Stotler et al.</i>	
Special aspects of MHD equilibrium and stability calculations for a divertor tokamak configuration (IAEA-CN-64/DP-17)	641
<i>C.V. Atanasiu, A.A. Subbotin</i>	
Self-consistent computation of transport by fluid drift turbulence in tokamak geometry (IAEA-CN-64/DP-18)	649
<i>B. Scott et al.</i>	
Three dimensional plasma edge turbulence including electron and ion temperature fluctuations (IAEA-CN-64/DP-19)	657
<i>A. Zeiler et al.</i>	
Anomalous transport theory for the reversed field pinch (IAEA-CN-64/DP-20)	665
<i>P.W. Terry et al.</i>	
High-harmonic ion cyclotron heating and current drive in ultra-small aspect ratio tokamaks (IAEA-CN-64/DP-21)	675
<i>D.B. Batchelor et al.</i>	
Removal of helium ash and impurities by using ICRH driven ripple transport (IAEA-CN-64/DP-22)	683
<i>K. Hamamatsu et al.</i>	
Electromagnetic resonances in toroidal cavities (IAEA-CN-64/DP-23)	693
<i>D.C. Giraldez et al.</i>	
Stability of kinetic ballooning and drift type modes in tokamaks with negative shear (IAEA-CN-64/DP-24)	703
<i>A. Hirose et al.</i>	
Status of the RFX experiment (IAEA-CN-64/DP-25)	711
<i>V. Antoni et al.</i>	
Magnetic-compression/magnetized-target fusion (MAGO/MTF): A marriage of inertial and magnetic confinement (IAEA-CN-64/DP-27)	723
<i>I.R. Lindemuth et al.</i>	

ITER (Session F)

ITER physics (IAEA-CN-64/F-1)	737
<i>S. Putvinski et al.</i>	
ITER divertor, and pumping and fuelling system designs (IAEA-CN-64/F-2)	755
<i>G. Janeschitz et al.</i>	

Safety characteristics of ITER (IAEA-CN-64/F-3)	769
<i>Y. Shimomura et al.</i>	
ITER magnets and plasma control (IAEA-CN-64/F-4)	779
<i>ITER Joint Central Team and Home Teams</i>	
Threshold power and energy confinement for ITER (IAEA-CN-64/F-5)	795
<i>ITER Confinement Database and Modelling Expert Group</i>	

ITER (Poster Session FP)

Development of a full-size divertor cassette prototype for ITER (IAEA-CN-64/FP-4)	809
<i>M.A. Ulrickson et al.</i>	
ITER primary vacuum pumping concept development and testing programme (IAEA-CN-64/FP-5)	817
<i>D.K. Murdoch et al.</i>	
R&D activity of Kazakhstan on the ITER project (IAEA-CN-64/FP-6)	827
<i>V.S. Shkolnik et al.</i>	
ITER vessel and blanket (IAEA-CN-64/FP-7)	835
<i>K. Ioki et al.</i>	
Development of double walled vacuum vessel for ITER (IAEA-CN-64/FP-8)	845
<i>K. Koizumi et al.</i>	
The ITER "L-4" blanket project (IAEA-CN-64/FP-9)	853
<i>W. Dänner et al.</i>	
ITER breeding blanket and DEMO relevant blanket test program (IAEA-CN-64/FP-10)	863
<i>Y. Gohar et al.</i>	
The ITER CS model coil project (IAEA-CN-64/FP-12)	871
<i>R.J. Jayakumar et al.</i>	
Toroidal field model coil programme for the ITER tokamak (IAEA-CN-64/FP-13)	879
<i>E. Salpietro et al.</i>	
Maintenance concepts for ITER (IAEA-CN-64/FP-14)	889
<i>ITER Joint Central Team and ITER Home Teams</i>	
Development of a remote maintenance system for ITER blankets (IAEA-CN-64/FP-15)	897
<i>S. Kakudate et al.</i>	
Status of development of remote maintenance of ITER divertor cassettes (IAEA-CN-64/FP-16)	905
<i>D. Maisonnier et al.</i>	
Ion cyclotron, electron cyclotron and lower hybrid heating and current drive in ITER (IAEA-CN-64/FP-17)	917
<i>G. Bosia et al.</i>	

ITER neutral beam injector design (IAEA-CN-64/FP-18)	927
<i>R. Hemsworth et al.</i>	
Validation of 1-D transport and sawtooth models for ITER (IAEA-CN-64/FP-21)	935
<i>J.W. Connor et al.</i>	
ITER scenarios including non-inductive steady state operation (IAEA-CN-64/FP-22)	945
<i>D. Boucher et al.</i>	
Energetic particle physics issues for ITER (IAEA-CN-64/FP-23)	953
<i>C.Z. Cheng et al.</i>	
ITER operational limits (IAEA-CN-64/FP-24)	963
<i>F.W. Perkins et al.</i>	
Disruption, vertical displacement event and halo current characterization for ITER (IAEA-CN-64/FP-25)	971
<i>J. Wesley et al.</i>	
Runaway electrons and fast plasma shutdown (IAEA-CN-64/FP-26)	979
<i>M.N. Rosenbluth et al.</i>	
Analysis of ITER divertor performance and ITER tokamak edge parameter database (IAEA-CN-64/FP-27)	987
<i>A. Kukushkin et al.</i>	
The ITER diagnostic system (IAEA-CN-64/FP-28)	995
<i>A.E. Costley et al.</i>	
Chairpersons of Sessions and Secretariat of the Conference	1003

HELICAL SYSTEMS

(Session C1)

Chairperson

F. WAGNER

Germany