

## CONTENTS OF VOLUME 1

### OVERVIEWS 1 (Session O1)

The ITER project: A physics and technology experiment (IAEA-CN-64/O1-1) .....	3
<i>R. Aymar et al.</i>	
Physics of high performance deuterium-tritium plasmas in TFTR (IAEA-CN-64/O1-2) .....	19
<i>K.M. McGuire et al.</i>	
Steady state operation research in JT-60U (IAEA-CN-64/O1-3) .....	37
<i>K. Ushigusa, JT-60 Team</i>	
Features of JET plasma behaviour in two different divertor configurations (IAEA-CN-64/O1-4) .....	57
<i>JET Team</i>	
Overview of ASDEX Upgrade results (IAEA-CN-64/O1-5) .....	79
<i>M. Kaufmann et al.</i>	
DIII-D tokamak concept improvement research (IAEA-CN-64/O1-6) .....	95
<i>V.S. Chan, DIII-D Team</i>	
Overview of helical systems (IAEA-CN-64/O1-7) .....	113
<i>A. Iiyoshi</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.

### OVERVIEWS 2 (Session O2)

Divertor detachment, He exhaust and compact toroid injection on TdeV (IAEA-CN-64/O2-1) .....	129
<i>R. Décoste et al.</i>	
Progress towards enhanced confinement, long duration discharges on Tore Supra (IAEA-CN-64/O2-2) .....	141
<i>Equipe Tore Supra</i>	
High-field compact divertor tokamak research on Alcator C-Mod (IAEA-CN-64/O2-3) .....	155
<i>I.H. Hutchinson et al.</i>	
Divertor biasing effects to reduce the L-H power threshold in the JFT-2M tokamak (IAEA-CN-64/O2-4) .....	167
<i>Y. Miura et al.</i>	
Quasi-stationary ELM free high confinement with edge radiative cooling in TEXTOR-94 (IAEA-CN-64/O2-5) .....	177
<i>G.H. Wolf et al.</i>	

## CONCEPT OPTIMIZATION 1 (Session A1)

Optimisation of JET steady-state ELM discharges with ITER-relevant divertor conditions (IAEA-CN-64/A1-1) ....	189
<i>JET Team</i>	
Stability in high gain plasmas in DIII-D (IAEA-CN-64/A1-2) ....	199
<i>E.A. Lazarus et al.</i>	
Transport physics in reversed shear plasmas (IAEA-CN-64/A1-3) ....	211
<i>F.M. Levinton et al.</i>	
Enhanced core confinement in JT-60U reversed shear discharges (IAEA-CN-64/A1-4) ....	227
<i>T. Fujita et al.</i>	
High fusion performance ELM free H-modes and the approach to steady operation (IAEA-CN-64/A1-5) ....	239
<i>JET Team</i>	
High triangularity discharges with improved stability and confinement in JT-60U (IAEA-CN-64/A1-6) ....	247
<i>Y. Kamada et al.</i>	

## CONFINEMENT AND $\alpha$ PARTICLES (Session A2)

Sawtooth mixing of alpha particles in TFTR D-T plasmas (IAEA-CN-64/A2-2) ....	261
<i>M.P. Petrov et al.</i>	
Prospects for alpha channeling: Initial results from TFTR (IAEA-CN-64/A2-3) ....	271
<i>N.J. Fisch et al.</i>	
Observation of alpha particle driven toroidal Alfvén eigenmodes in TFTR DT plasmas (IAEA-CN-64/A2-4) ....	281
<i>R. Nazikian et al.</i>	
Study of TFTR DT neutron spectra using natural diamond detectors (IAEA-CN-64/A2-5) ....	293
<i>A.V. Krasilnikov et al.</i>	
Alfvén eigenmodes and fast particle physics in JET reactor relevant plasmas (IAEA-CN-64/A2-6) ....	303
<i>JET Team</i>	

## OPERATIONAL LIMITS AND DISRUPTIONS (Session A3)

High performance experiments in JT-60U high current divertor discharges (IAEA-CN-64/A3-1) ....	315
<i>S. Ishida et al.</i>	

## Performance limitations in JET hot ion H-modes (IAEA-CN-64/A3-2) ....

*JET Team*

Fast current shutdown scenario for major disruption softening in JT-60U (IAEA-CN-64/A3-4) ....	345
<i>Y. Kawano et al.</i>	
MHD stability and disruption studies in ASDEX Upgrade (IAEA-CN-64/A3-5) ....	359
<i>O. Gruber et al.</i>	

## DIVERTOR EXPERIMENTS (Session A4)

Effect of divertor configuration on plasma performance in JET (IAEA-CN-64/A4-1) ....	371
<i>JET Team</i>	
Radiative divertor with improved core plasma confinement in JT-60U (IAEA-CN-64/A4-2) ....	385
<i>K. Itami et al.</i>	
Divertor plasma physics experiments on the DIII-D tokamak (IAEA-CN-64/A4-3) ....	397
<i>M.A. Mahdavi et al.</i>	
Edge and divertor physics in ASDEX Upgrade with emphasis on density limit characteristics (IAEA-CN-64/A4-4) ....	413
<i>V. Mertens et al.</i>	
Variation of the divertor geometry in Alcator C-Mod (IAEA-CN-64/A4-5) ....	425
<i>B. Lipschultz et al.</i>	

## CONCEPT OPTIMIZATION 2 (Session A5)

Study of H-mode physics in ASDEX Upgrade (IAEA-CN-64/A5-1) ....	439
<i>H. Zohm et al.</i>	
MHD stability studies in reversed shear plasmas in TFTR (IAEA-CN-64/A5-2) ....	453
<i>J. Manickam et al.</i>	
Local analysis of confinement and transport in neutral beam heated DIII-D discharges with negative magnetic shear (IAEA-CN-64/A5-3) ....	463
<i>D.P. Schissel et al.</i>	
High power density H-modes in Alcator C-Mod (IAEA-CN-64/A5-4) ....	475
<i>Y. Takase et al.</i>	

Optimisation of JET plasmas with current profile control (IAEA-CN-64/A5-5) .....	487	Confinement and transport studies in ASDEX Upgrade (IAEA-CN-64/AP1-5) .....	625
<i>JET Team</i>		<i>F. Ryter et al.</i>	
Transport and loss of energetic ions in JT-60U (IAEA-CN-64/A5-6) .....	497	ICRF assisted low voltage start-up in TEXTOR-94 (IAEA-CN-64/AP1-6) .....	633
<i>K. Tobita et al.</i>		<i>R. Koch et al.</i>	
<b>TRANSPORT EXPERIMENTS (Session A6)</b>			
Transport and fluctuations: More evidence on TEXT (IAEA-CN-64/A6-1) .....	509	Influence of the shape on TCV plasma properties (IAEA-CN-64/AP1-7) .....	643
<i>G. Cima et al.</i>		<i>J.-M. Moret et al.</i>	
Dependence of core turbulence on the discharge parameters in T-10 and its correlation with transport (IAEA-CN-64/A6-2) .....	519	Modelling an RLC circuit for the investigation of disruption instabilities in tokamaks (IAEA-CN-64/AP1-8) .....	649
<i>V.A. Vershkov et al.</i>		<i>R. Amrollahi, E. Farshi</i>	
Local analysis of transport and turbulence in Tore Supra (IAEA-CN-64/A6-3) .....	535	Heat transport in the RTP tokamak (IAEA-CN-64/AP1-9) .....	655
<i>C. Lavoron et al.</i>		<i>G.M.D. Hogeweij et al.</i>	
Physics of turbulence control and transport barrier formation in DIII-D (IAEA-CN-64/A6-4) .....	547	Ware pinch effect in Tore Supra (IAEA-CN-64/AP1-10) .....	663
<i>E.J. Doyle et al.</i>		<i>H. Capes, P. Laporte</i>	
Studies of perturbative plasma transport, ice pellet ablation and sawtooth phenomena in the JIPPT-IIU tokamak (IAEA-CN-64/A6-5) .....	559	Modeling of Tore Supra experiments and implications for the control of an 'advanced' steady state reactor (IAEA-CN-64/AP1-11) .....	669
<i>K. Toi et al.</i>		<i>X. Litaudon et al.</i>	
Isotope scaling of heating and confinement in multiple regimes of TFTR (IAEA-CN-64/A6-6) .....	573	Transient density fluctuations related to the sawtooth crash in the Tore Supra tokamak (IAEA-CN-64/AP1-12) .....	677
<i>S.D. Scott et al.</i>		<i>P. Hennequin et al.</i>	
<b>CONFINEMENT AND WAVES, DISRUPTIONS AND INSTABILITIES (Poster Session AP1)</b>			
Tangential CT injection and 1.5 cycle AC operation experiments on STOR-M (IAEA-CN-64/AP1-1) .....	595	HT-7 superconducting tokamak and its operation (IAEA-CN-64/AP1-13) ....	685
<i>C. Xiao et al.</i>		<i>HT-7 Group</i>	
Energy confinement and H-mode power threshold scaling in JET with ITER dimensionless parameters (IAEA-CN-64/AP1-2) .....	603	Recent experiments and confinement studies on the HL-1M tokamak (IAEA-CN-64/AP1-14) .....	693
<i>JET Team</i>		<i>HL-1M Team</i>	
Implications from dimensionless parameter scaling experiments (IAEA-CN-64/AP1-3) .....	611	Ion cyclotron emission: A collective alpha-particle effect in deuterium- tritium plasmas in TFTR and JET (IAEA-CN-64/AP1-15) .....	699
<i>T.C. Luce et al.</i>		<i>R.O. Dendy et al.</i>	
Statistical properties of turbulent transport and fluctuations in tokamak and stellarator devices (IAEA-CN-64/AP1-4) .....	617	Halo currents and VDEs in COMPASS-D (IAEA-CN-64/AP1-16) .....	707
<i>C. Hidalgo et al.</i>		<i>G.G. Castle et al.</i>	
Beta limit studies and the effect of error fields at low collisionality on COMPASS-D (IAEA-CN-64/AP1-17) .....	715	Disruptions and vertical displacement events in JET (IAEA-CN-64/AP1-18) .....	723
<i>D.A. Gates et al.</i>		<i>JET Team</i>	
Eddy-current characterization and plasma rotation control in wall- stabilized tokamak discharges (IAEA-CN-64/AP1-19) .....	731	<i>M.E. Mauel et al.</i>	
Disruption studies in DIII-D (IAEA-CN-64/AP1-20) .....	739	<i>A.G. Kellman et al.</i>	

Practical beta limit in ITER shaped discharges in DIII-D and its increase by higher collisionality (IAEA-CN-64/AP1-21) .....	747	Influence of limiter biasing on confinement and stability of ISTTOK plasma (IAEA-CN-64/AP2-8) .....	849
<i>R.J. La Haye et al.</i>		<i>J.A.C. Cabral et al.</i>	
Disruptions, halo currents and killer pellets in Alcator C-Mod (IAEA-CN-64/AP1-22) .....	757	H mode transition and power threshold in JT-60U (IAEA-CN-64/AP2-9) ....	857
<i>R.S. Granetz et al.</i>		<i>T. Fukuda et al.</i>	
Positive current spike generation during major disruptions and ICRF heating experiments under conditions of L-H transition on the T-11M tokamak (IAEA-CN-64/AP1-23) .....	763	Study of H-mode threshold conditions in DIII-D (IAEA-CN-64/AP2-10) ....	867
<i>S.V. Mirnov et al.</i>		<i>R.J. Groebner et al.</i>	
Evolution of the tearing mode during LHCD induced mode locking in WT-3 (IAEA-CN-64/AP1-24) .....	771	Local plasma parameters and H-mode threshold in Alcator C-Mod (IAEA-CN-64/AP2-11) .....	875
<i>T. Maekawa et al.</i>		<i>A.E. Hubbard et al.</i>	
An attempt to mitigate disruptive plasma current decay in relation to vacuum vessel electrical aspects (IAEA-CN-64/AP1-25) .....	777	Investigation of causality in the H-L transition on the JFT-2M tokamak (IAEA-CN-64/AP2-12) .....	885
<i>M. Abe et al.</i>		<i>K. Hanada et al.</i>	
<b>DIVERTOR EXPERIMENTS AND TOKAMAK CONCEPT OPTIMIZATION (Poster Session AP2)</b>			
Active control of helium ash exhaust and transport characteristics in JT-60U (IAEA-CN-64/AP2-1) .....	789	Improved plasma confinement in the TUMAN-3M and FT-2 tokamaks (IAEA-CN-64/AP2-13) .....	891
<i>A. Sakasai et al.</i>		<i>M.V. Andrejko et al.</i>	
Experimental evidence for the suitability of ELMing H-mode operation in ITER with regard to core transport of helium (IAEA-CN-64/AP2-2) .....	801	New features of the L-H transition in H modes in HT-6M (IAEA-CN-64/AP2-14) .....	899
<i>M.R. Wade et al.</i>		<i>B.N. Wan et al.</i>	
Impurity transport and exhaust in radiative edge experiments in ASDEX Upgrade (IAEA-CN-64/AP2-3) .....	809	Formation and evolution of internal transport barriers in Alcator C-Mod (IAEA-CN-64/AP2-15) .....	907
<i>H.-S. Bosch et al.</i>		<i>D.T. Garnier et al.</i>	
Erosion and transport of tungsten in ASDEX Upgrade (IAEA-CN-64/AP2-4) .....	817	Turbulent fluctuations in the main core of TFTR plasmas with negative magnetic shear (IAEA-CN-64/AP2-16) .....	913
<i>K. Krieger et al.</i>		<i>E. Mazzucato et al.</i>	
Transport studies in the scrape-off layer and divertor of Alcator C-Mod (IAEA-CN-64/AP2-5) .....	825	Deuterium-tritium TFTR plasmas with high internal inductance (IAEA-CN-64/AP2-17) .....	921
<i>B. LaBombard et al.</i>		<i>S.A. Sabbagh et al.</i>	
Impurity screening studies in the Alcator C-Mod tokamak (IAEA-CN-64/AP2-6) .....	833	Chairpersons of Sessions and Secretariat of the Conference .....	931
<i>G.M. McCracken et al.</i>			
Control of boundary power flux with ergodic divertor on Tore Supra (IAEA-CN-64/AP2-7) .....	839		
<i>P. Ghendrih et al.</i>			