

# Time Table

## 11th IAEA Technical Meeting on H-mode and Transport Barriers

26-28 September 2007, Tsukuba International Congress Center "EPOCAL", Tsukuba, Japan

Wednesday, 26 September		Thursday, 27 September		Friday, 28 September	
08:30 - 09:00	Registration*				
09:00 - 09:20	Welcome	09:00 - 10:30	Topic 3: <b>ITB and Rotation</b>	09:00 - 10:30	Topic 5: <b>Theory and Simulation</b>
09:20 - 10:50	Topic 1: <b>Transition and Pedestal</b>				
10:50 - 11:10	Coffee break	10:30 - 10:50	Coffee break	10:30 - 11:00	Coffee break, Photo
11:10 - 12:50	Poster on Topic 1	10:50 - 12:30	Poster on Topic 3	11:00 - 12:30	Topic 6: <b>Projections to ITER</b>
12:50 - 14:20	Lunch	12:30 - 14:00	Lunch	12:30 - 14:00	Lunch
14:20 - 15:50	Topic 2: <b>ELM</b>	14:00 - 15:30	Topic 4: <b>Non-axisymmetric m. f.</b>	14:00 - 15:40	Poster on Topic 5 & 6
15:50 - 16:10	Coffee break	15:30 - 15:50	Coffee break	15:40 - 16:00	Coffee break
16:10 - 17:50	Poster on Topic 2	15:50 - 17:30	Poster on Topic 4	16:00 - 16:40	Summary session
		18:30 - 21:00	Banquet		

\* Registration desk is open on Tuesday, 25 September from 17:00 to 19:00 at Okura Frontier Hotel Tsukuba

1. H-mode **transition** and the **pedestal**-width
2. Dynamics in ETB: **ELM** threshold, non-linear evolution and suppression, etc
3. Transport relations of various quantities including turbulence in plasmas with **ITB**:  
**Rotation** physics is especially highlighted
4. Transport barriers in **non-axisymmetric magnetic fields**
5. **Theory and simulation** on transport barriers
6. **Projections** of transport barrier physics **to ITER**

*A.W. Leonard*

*N. Oyama*

*J.E. Rice*

*K. Ida*

*F. Jenko*

*G.T. Hoang*

# Invited Review Talks

## Wednesday, 26 September

- 09:20 - 10:50 Overview of Experimental Characterization of the H-mode Edge Pedestal Structure  
A. Leonard
- 14:20 - 15:50 Progress and Issues in Physics Understanding of Dynamics, Mitigation and Control of ELMs  
N. Oyama

## Thursday, 27 September

- 09:00 - 10:30 Spontaneous Rotation and Momentum Transport in Tokamak Plasmas  
J. Rice
- 14:00 - 15:30 Transport Barriers in Non-axisymmetric Magnetic Fields  
K. Ida

## Friday, 28 September

- 09:00 - 10:30 Transport Barriers: Theory and Simulation  
F. Jenko
- 11:00 - 12:30 Projection of Transport Barrier Physics to ITER  
T. Hoang

# Poster Presentations

## Wednesday, 26 September

11:10 - 12:50    **Topic 1**

- |       |  |
|-------|--|
| P1-01 | Formation of edge transport barrier and scaling of heating power threshold in CHS<br>T. Akiyama  |
| P1-02 | Paleoclassical Model For Electron Temperature Pedestal<br>J. Callen  |
| P1-03 | Temporal and Spatial Evolution of the H-mode Pedestal in DIII-D<br>R. Groebner   |
| P1-04 | Edge Transport Barrier Width in ASDEX Upgrade<br>L. Horton   |
| P1-05 | Evolution of edge profiles and fluctuations in two-phase L-H transitions in unfavorable magnetic configurations in Alcator C-Mod<br>A. Hubbard |
| P1-06 | Predictive modelling of the H-mode power threshold in JET<br>D. Kalupin  |
| P1-07 | H-mode transition in the presence of counter-NBI in the TUMAN-3M<br>S. Lebedev   |
| P1-08 | Dependence of the L-H Power Threshold on Divertor Balance and Heating Method in NSTX<br>R. Maingi (H. Meyer)                                   |
| P1-09 | The structure, evolution and role of the edge radial electric field in H-mode and L-mode on MAST<br>H. Meyer                                   |
| P1-10 | Power Threshold for L-H Transition of High Density Edge Transport Barrier with Reheat Mode on CHS<br>T. Minami                                 |
| P1-11 | Observation of the High Density Edge Transport Barrier in CHS using Beam Emission Spectroscopy<br>T. Oishi                                     |
| P1-12 | Toroidal field ripple effects on high triangularity ELMy H-modes in JET and implications for ITER<br>R. Sartori                                |
| P1-13 | Physics Understanding of the Pedestal Power Dependence: Implications for a First Principles Pedestal Model<br>P. Snyder                        |
| P1-14 | Radial Structure of Edge Transport Barrier and Electrostatic Fluctuations in the Compact Helical System<br>M. Takeuchi                         |
| P1-15 | Radial Structure of Edge Transport Barrier Formed in Helical Divertor Configuration of the Large Helical Device<br>K. Toi                      |

## Wednesday, 26 September

16:10- 17:50    **Topic 2**

- P2-01      Effect of Equilibrium Properties on the Structure of the Edge MHD Modes in Tokamaks  
N. Aiba
- P2-02      ELM propagation in the high-field-side Scrape-off Layer of the JT-60U tokamak  
N. Asakura
- P2-03      Radial Electric Field and Plasma Rotation in TUMAN-3M Tokamak  
L. Askinazi
- P2-04      Optimised ELM penetration and pedestal pressure for JET AT scenarios  
M. Beurskens
- P2-05      A comparison of the spatial and temporal structure of type-I ELMs  
A. Kirk
- P2-06      A comparison of the spatial structure of type I ELMs in ASDEX Upgrade and MAST  
A. Kirk
- P2-07      Pellet perturbations for probing threshold conditions and investigating onset dynamics of paced ELMs  
P. Lang (L. Horton)
- P2-08      Reconstruction of two-dimensional structure by using conditional techniques near the edge transport barrier in Compact Helical System  
Y. Nagashima
- P2-09      New pedestal temperature models with self-consistency calculation of safety factor and magnetic shear  
T. Onjun
- P2-10      Edge Stability of Stationary ELM-Suppressed Regimes on DIII-D  
T. Osborne
- P2-11      Effect of toroidal field ripple and toroidal rotation on H-mode performance and ELM characteristics in JET/JT-60U similarity experiments  
N. Oyama
- P2-12      Predictive modelling of ripple-induced effects in ELMy H-mode plasmas  
V. Parail
- P2-13      Characteristics of quiescent H-mode plasmas with co-, ctr- and balanced injection of neutral beam in JT-60U  
Y. Sakamoto
- P2-14      ELM-like Oscillations Observed in the Large-Helical-Device Plasmas with/without L-H Transition  
F. Watanabe

## Thursday, 27 September

10:50 - 12:30    **Topic 3**

- P3-01      Velocities and Transport Barriers in NSTX OH and HHFW Heated H-modes  
C. Bush (T.S. Hahm)
- P3-02      Improved Mirror-Plasma Regime Guarded by Coaxially Nested Intense ExB  
Radially Sheared Flow Having a Peaked-on-Axis Sheared Vorticity  
T. Cho
- P3-03      The Influence of Toroidal Field Ripple on the Formation and Performance of  
Internal Transport Barriers at JET  
P. de Vries
- P3-04      New Developments in Momentum Transport Bifurcation Phenomenology  
P. Diamond (C. McDevitt)
- P3-05      The Features of the Electron Heat Transport during High Power ECRH &SMBI  
on HL-2A  
X.T. Ding
- P3-06      Extension of DIII-D Hybrid Plasmas to Reactor Relevant Conditions with Te~Ti  
and Low Rotation  
E. Doyle
- P3-07      Dependence of H-mode Power Threshold and Energy Confinement on Toroidal  
Plasma Rotation in the DIII-D Tokamak  
P. Gohil
- P3-08      Geodesic Acoustic Mode Spectroscopy  
S.-I. Itoh
- P3-09      Change of fluctuation properties during non-local temperature rise in LHD from  
2d phase contrast imaging  
C. Michael
- P3-10      Observation of MHD Instabilities and Improved Particle Confinement during  
IBW Heating in HT-7 Tokamak  
Y.J. Shi
- P3-11      Temporal Change of Particle Transport of Super Dense Core Plasma in LHD  
K. Tanaka
- P3-12      Enhanced H-mode energy confinement with positive toroidal rotation in JT-60U  
H. Urano

## Thursday, 27 September

15:50 - 17:30 **Topic 4**

- P4-01 Electric Pulsation in Electron-Root Internal Transport Barrier in Large Helical Device  
T. Ido
- P4-02 Confinement Characteristics of Reheat Mode Discharge in High-Density Regime of Compact Helical System (CHS)  
M. Isobe
- P4-03 Study of spontaneous transition by toroidal current control in a low magnetic shear helical device  
S. Kobayashi
- P4-04 Observation of  $m=2/n=1$  Magnetic Island on the Foot Point of Electron Internal Transport Barrier using Soft X-ray CCD Camera in the Large Helical Device  
T. Kobuchi
- P4-05 Effect of Energetic Beam Ions on Radial Electric Field Transition in Helical Plasmas  
S. Murakami
- P4-06 Zonal Flow Driven By High-Energy Particle during Nonlinear MHD Evolution of CHS Fishbone Instability  
S. Ohshima
- P4-07 Pellet injection and internal diffusion barrier formation in LHD plasmas  
R. Sakamoto
- P4-08 Simultaneous Measurements of Density and Potential Profile of Internal Transport Barrier Plasmas by Heavy Ion Beam Probe in Compact Helical System  
A. Shimizu
- P4-09 Clear Transition to High-Te State with an Electron Internal Transport Barrier Creation in EC Heated LHD Plasmas  
T. Shimozuma
- P4-10 Impurity diagnostics for edge transport barrier discharges in the Compact Helical System  
C. Suzuki
- P4-11 Study of Transition Mechanism to Improved Confinement Mode in Helical Plasmas by Electrode Biasing  
H. Takahashi
- P4-12 Ion Transport in Core Electron Root Confinement Plasmas in Large Helical Device  
Y. Takeiri
- P4-13 Core electron temperature rise due to Ar gas-puff in EC-heated LHD plasmas  
N. Tamura
- P4-14 Development of Hydrogen Storage Electrode for Plasma Biasing in the Tohoku University Helicac  
H. Utoh
- P4-15 Observations of Impurity Hole in High Ion Temperature Discharge on LHD  
M. Yoshinuma

## Friday, 28 September

14:00 - 15:40    **Topic 5**

- P5-01      Kinetic simulation of resonant magnetic perturbation effect on pedestal transport in a tokamak geometry  
C.S. Chang
- P5-02      Simulation study of density dynamics effect on the ELM behavior with TOPICS-IB  
N. Hayashi
- P5-03      Paleoclassical Transport Explains Electron Transport Barriers in RTP and TEXTOR  
G. Hogeweij (J. Callen)
- P5-04      Turbulent transport of poloidal momentum in toroidal plasmas  
K. Itoh
- P5-05      Selection Rule for Turbulent Structural Formation: Study of Magnetized Cylindrical Plasmas  
N. Kasuya
- P5-06      Transport due to interchange mode turbulence in a mirror with divertor  
I. Katanuma
- P5-07      Gyrofluid simulation on the nonlinear excitation and radial structure of GAMs in ITG turbulence  
J.Q. Li
- P5-08      A model of GAM intermittency near critical gradient in toroidal plasmas  
K. Miki
- P5-09      Electromagnetic effects on zonal mode generation and turbulent transport in tokamak plasmas  
N. Miyato
- P5-10      Three-dimensional neutral transport simulation during transport barrier formation in the JT-60U plasmas  
Y. Nakashima
- P5-11      MHD stability due to internal transport barrier and its effect on the transport  
T. Ozeki
- P5-12      Two-Dimensional Full Particle Simulation of the Formation of Electrostatic Field in a Tokamak Plasma  
T. Takizuka
- P5-13      Multi-scale transport simulation with ion temperature gradient driven drift wave turbulence  
S. Tokunaga
- P5-14      Global nature of zonal flow due to the finite band width  
K. Uzawa

## Friday, 28 September

14:00 - 15:40 **Topic 6**

- P6-01 Canonical Rotation Profiles from Turbulent Equipartition Theory of Toroidal Momentum Pinch  
T.S. Hahm
- P6-02 Internal Transport Barrier Simulation in Helical and Tokamak Systems  
Y. Higashiyama
- P6-03 Studies of H-mode pedestal physics on Alcator C-Mod with enhancements to neutral pumping  
J. Hughes
- P6-04 A steady-state scenario for ITER using off-axis Electron-Cyclotron-Current Drive  
F. Imbeaux
- P6-05 Power requirements for accessing the H-mode in ITER  
Y. Martin
- P6-06 Collisionality and beta dependence of confinement in JET ELMy H-modes  
D. McDonald
- P6-07 Effect of pedestal width on the performance of ITER  
T. Onjun
- P6-08 H-Mode confinement properties close to the power threshold in ASDEX Upgrade  
F. Rytter
- P6-09 H-Mode Plasmas Transport Simulation in ITER with Effect of Neoclassical Tearing Mode  
Y. Takahashi
- P6-10 Effects of low central fuelling on density and ion temperature profiles in reversed shear plasmas on JT-60U  
H. Takenaga
- P6-11 A Comparison of Hybrid Confinement with ELMy H-mode Confinement  
K. Thomsen
- P6-12 The Role of MHD in the Sustainment of Electron Internal Transport Barriers and H-Mode in TCV  
G. Turri
- P6-13 Particle confinement of pellet-fuelled H-mode plasmas in MAST  
M. Valovic
- P6-14 Comparison of the  $\beta$  Dependence of Confinement and Heat Transport in ASDEX Upgrade and DIII-D Experiments  
L. Vermare
- P6-15 Investigation on  $\beta$  dependence of transport in experimental conditions of ASDEX Upgrade  $\beta$  scans using linear gyrokinetic simulations  
L. Vermare