

# Agenda for the 7<sup>th</sup> ITPA MHD Topical Group Meeting, and US/Japan Workshop on MHD Stability Control and Related Confinement of Toroidal Plasmas ITER Build. Naka Japan 6<sup>th</sup>-9<sup>th</sup> February 2006

## **Monday 6 February**

### **9:00 Opening address:**

H. Ninomiya

### **9:10-10:40 TAE and High energy particles**

**Chairman: K.Yamazaki**

(30+10m) Key Results from 9<sup>th</sup> IAEA TM on Energetic Particles, "Earth Wisdom Center" at  
Takayama, Japan, 9-11 Nov. 2005

K Toi

(20+10m) Fast particle studies - recent developments in theory and experiments on ASDEX  
Upgrade

S. Guenter

(15+ 5m) Orbit following calculation of energetic ions for design of ferritic insertion on JT-60U

K. Shinohara

### **10:40- 10:50 Coffee Break**

### **10:50-11:50 Stability and control of RWM and High $\beta$ plasmas**

**Chairman: S.Gunter**

(20+10m) RWM Feedback of AT Plasmas with Audio Amplifiers on the DIII-D Device

M Okabayashi

(20+10m) Feedback Control of the Resistive Wall Mode: 'State-Variable' Feedback,  
Controllability, Observability

G Navratil

(20+10m) Active Control of RWM Using Improved Radial Sensors - Suggestion for ITER  
Feedback System

Y Liu

### **12:20-13:20 Lunch**

**Chairman: G.Navratil**

(20+ 5m) Adaptive Stochastic Control of Resistive Wall Modes in Tokamaks

Zhipeng Sun

(20+ 5m) Extension of the MARG2D Code for External MHD Mode Analysis

S.Tokuda

(20+ 5m) Active feedback control results in RFX-mod

R Paccagnella

(15+ 5m) Remnant Stochastic Transport in the Dynamo-Free RFP

John Sarff

(20+ 5m) Single Helicity states in the RFP: recent results on spontaneous transitions and  
active control

Piero

Martin

### **15:20-15:30 Coffee Break**

**Chairman: K.Toi**

(20+ 5m) MHD Instability Control in a RFP plasma on TPE-RX

Y. Hirano

(20+ 5m) Improvement of particle confinement in the quasi helical state of the Reversed-Field  
Pinch

L. Frassinetti

(20+ 5m) Controlling Interchange Instabilities in the Levitated Dipole Experiment

Darren Garnier

(20+ 5m) MHD phenomena in flowing plasmas(RT-1 project and related topics)

M. Furukawa

(20+ 5m) Properties of Flowing Two-Fluid Equilibria with Non-Uniform Density

A.Ishida

### 17:35 Adjourn

## **Tuesday 7 February**

### **9:00-10:15 Stability and control of RWM and High $\beta$ plasmas (cont.)**

**Chairman: M.Okabayashi**

(20+ 5m) IPP RWM code development

S Guenter

(20+ 5m) Stabilization of RWM in National Centralized Tokamak

G.Kurita

(20+ 5m) Interactions between Low-n Internal Kink Mode and High-n Ballooning Mode

Associated with Saturation

Y.Kagei

### **10:15-10:25 Coffee Break**

### **10:25-12:00 Stability and control of NTM**

**Chairman: K.Lackner**

(20+ 5m) Latest results on modulated ECCD feedback of NTMs in ASDEX Upgrade

S. Guenter

(20+ 5m) NTM Stability and Control in DIII-D

E. Strait

(15+ 5m) Experiment and Simulation on Stabilization of Neoclassical Tearing Mode in JT-60U

A. Isayama

(20+ 5m) Formulation of modified Rutherford equation for NTMs

S. Kononov

Simulation of Neoclassical Tearing Modes in ITER Using 3D Nonlinear Code NFTC

(V Pustovitov)

### **Lunch 12:00-13:00**

**Chairman: S.Jardin**

(20+ 5m) Long Term Evolution of the Forced Magnetic Island in the Rotating Plasma

Y Ishii

### **13:25-14:25 Confinement and MHD**

(20+10m) Effect of Resonant Magnetic Perturbation on Edge Transport and Stability in DIII-D

E. Strait

(20+10m) Observation of Edge MHD Modes and their Impact on Plasma Confinement in the Large Helical Device

F. Watanabe

### **14:25-14:40 Coffee Break**

**Chairman: T.Ozeki**

(20+10m) Status and Design of NCSX

S.Jardin

(20+10m) MHD Stability and Confinement Behaviors of an LHD plasma with Large Counter Plasma Current

K.Toi

(20+10m) Formation of Current Hole by Pair Vortex Motion

T. Tsuda

(20+10m) 2D structure of the MHD instabilities and its evolution in the Large Helical Device

S.Ohdachi

**16:40 Adjourn**

**18:00 Bus will leave from ITER build. for Akogi-club via Tokai-station**

**18:30 Dinner Akogi-club**

### **Wednesday 8 February**

#### **9:00-10:10 Confinement and MHD**

(20+10m) Progress in 3D Modeling of Fusion Plasmas

(20+10m) Burning Plasma Simulation in Tokamak and Helical Systems

(15+ 5m) Integrated Simulation of MHD and Transport

(10+ 5m) DCP-IMP#1 Data Structures

**Chairman: E.Strait**

S C. Jardin

K.Yamazaki

T. Ozeki

Jo Lister

#### **10:25-10:35 Coffee Break**

(15+ 5m) Locked Mode and Error Field Physics in NSTX

(15+ 5m) Flow control and RWM physics in NSTX

( 7+ 3m) Fast ion transport in "sea-of-TAE"

(15+ 5m) Nonlinear dynamics of spherical tokamak plasma on ELM

**Chairman: J.Lister**

J Menard

J Menard

J Menard

N.Mizuguchi

#### **11:45-13:00 Lunch**

#### **13:00- 15:00 Disruption**

(20+10m) Gas Jet Disruption Mitigation Studies on Alcator C-mod

(20+10m) Mitigation of disruptions in ASDEX Upgrade

(20+10m) "A Discussion on Paths for Discharge Termination" and "Laser Inverse Compton Scattering for Diagnostics of Runaway Electrons"

(20+10m) DIII-D MGI and Application to ITER

**15:00-15:15 Summary of MHD workshop / Closing**

**Chairman: T.Hender**

R Granetz

K Lackner

Y Kawano

J Wesley

**M.Okabayashi**

#### **15:15-15:30 Coffee Break**

### **continue with the ITPA meeting**

#### **15:30-17:30 Disruption Database session**

ITPA Disruption Database Status

Characteristics of the Fastest DIII-D Current Quenches in the ITPA

ITER Guideline for the fastest current quench

**led by John Wesley**

A Hyatt

A Hyatt

M Sugihara

**17:30 Adjourn**

### **Thursday 9 February**

#### **9:00-10:15 Noise determination for vertical and RWM control**

Estimates of AC Losses in ITER Side Correction Coils during RWM Stabilization

JT-60U noise results

Y Gribov

M Takechi

n=0 noise in JET

T Hender

**10:30-12:00 RWM code benchmarking and developments**

Benchmarking of Codes Simulating RWM Control in ITER: RWM Response to Coil Current

Y Gribov

MARS-F Benchmark Results of RWM in ITER: Feedback

Y Liu

RWM code benchmarking VALEN results

J Bialek

**ITPA issues 13:00–15:00**

Disruption Issues and Actions for Burning Plasmas

Progress in the ITER Physics Basis

**T Hender**

John Wesley

**Closing session 15:00–16:00**

Update of high priority research plan

Next meeting

**16:00 End of meeting**