CWGM11: Mar.11-13,2013
@CIEMAT + Video Conference
(IPP, Kharkov, Kyoto U., NIFS, U.Wisconsin, PPPL) (Participants >50)

Sessions
- Flows and Viscosity (S.Satake)
- 3D equilibrium (Y.Suzuki)
- Database
- Energetic Particles (K.Nagaoka)
- Transport validation (M.Yokoyama)
- Island dynamics (Y.Narushima)
- ITPA IOS (E.Ascasibar)
- H mode (M.Hirsch)
- Reactor/System code (R.Wolf)
- Joint Experiment (LHD, H.Yamada)

*Impurity issues frequently mentioned*
Follow Up of 11th CWGM (progress, future plans,,)

- Transport Validation (Yokoyama)
- Flows and Viscosity (Satake)
- AEs, Energetic particles (Yamamoto)
- Link to ITPA (IOS: E.Ascasibar, …………

- Information exchange on joint activities in 2013/2014
- Data access for joint experiment (Ida)

- On 13th CWGM
Under auspices of IEA Implementing Agreement for Cooperation in Development of the Stellarator–Heliotron Concept (2.10.1992)

International Stellarator–Heliotron Database

http://ishcdb.nifs.ac.jp/

- CWGM (Coordinated Working Group Meeting)
  - 12th (Padova, September 20, 2013)
  - 11th (Ciemat, March 11–13, 2013)
  - 10th (IPP–Greifswald, June 6–8, 2012)
  - 9th (ANU, January 28, 2012)
  - 8th (NIFS, March 16–17, 2011)
  - 7th (IPP–Greifswald, June 30 – July 2, 2010)
  - 6th (PPPL, October 16, 2009)
  - 5th (Stuttgart Univ, July 6–8, 2009) (Click “Day”)
  - 4th (Ciemat, October 20–22, 2008) (See Agenda Page)
  - 3rd (NIFS, October 23–24, 2007)
  - 2nd (IPP–Greifswald, June 4–6, 2007)
  - 1st (Kyoto University, September 19–22, 2006)
CWGM is a programmatic framework for international collaboration among S-H devices,

Under auspices of
IEA-IA (International Energy Agency, Implementing Agreement) on
Co-operation in Development of the Stellarator-Heliotron Concept
(Chair, A.Komori)

Gateway to ITPA, SSOCG,

CWGM minutes have been submitted (reported) to
• Stellarator News
• Executive Committee of IA → included in IA Annual Report
Comprehensive and exact understanding of complex physics, one of the cleverest ways is to assess a model by comparing observations with very different properties but with same high scientific quality.
List of Joint Papers from CWGM activity

[20th IAEA-FEC (2004)]

[15th ISW (2005)]


[21st IAEA-FEC (2006)]


[16th ISHW/17th ITC (2007)]

K.McCarthy et al., “Comparison of Impurity Transport in Different Magnetic Configurations”

Y.Feng et al., “Comparative Divertor-Transport Study for W7-AS and LHD (EMC3/EIRENE)”


A.Weller et al., “Extensions of the International Stellarator Database by High-β Data from W7-AS and LHD”

A.Dinklage et al., “Status of the International Stellarator/Heliotron Profile Database”

H.Funaba et al., “Data Structure for LHD Plasmas in the International Stellarator/Heliotron Profile Database”


[22nd IAEA-FEC (2008)]


[17th ISHW (2009)]


H.Funaba et al., “Data Servers for the International Stellarator/Heliotron Profile Database (ISHPDB)”

S.Sakakibara et al., “Remarks on Finite Beta Effects in International Stellarator/Heliotron Scaling”


D.Pretty et al., “Results from an international MHD data mining collaboration”


[23rd IAEA-FEC (2010)]
M.Hirsch et al., “H-mode in Helical Devices”


[EPS (2011)]
A.Kus et al., “Identification of variables causing clustering in the global energy confinement data by use of discriminant analysis”

[APS (2011)]
C.Hegna et al., “Healing of magnetic islands in stellarators by plasma flow” (invited talk)

Y.Narushima et al., “Behavior of poloidal rotation during transition of magnetic island dynamics in LHD”

[18th ISHW (2012)]
M.Yokoyama et al., “Towards Validation of Confinement Performance Prediction Based on the International Profile Database (Coordinated Working Group)” (invited talk)

D.A.Spong et al., “Energetic particle physics and Alfven instabilities in 3D configurations”

C.Hegna et al., “Healing of magnetic islands by plasma flow in stellarators” (invited talk)

6/5
Joint papers in 2013

Inter-machine validation study of neoclassical transport modelling in medium- to high-density stellarator-heliotron plasmas

Mitigation of NBI-driven Alfvén eigenmodes by electron cyclotron heating in the TJ-II stellarator
Nucl. Fusion 53 (2013) 072004
Influence of the resonant magnetic perturbations on transport in the Large Helical Device
*Nucl. Fusion* **53** (2013) 113012

Control of 3D edge radiation structure with resonant magnetic perturbation fields applied to the stochastic layer and stabilization of radiative divertor plasma in LHD
*Nucl. Fusion* **53** (2013) 093032

A magnetic diagnostic code for 3D fusion equilibria
S A Lazerson, S Sakakibara and Y Suzuki
Joint presentations in $19^{\text{th}}$ ISHW (2013)

S. Yamamoto et al., (invited)
External control of energetic-ion-driven MHD instabilities by ECH/ECCD in helical plasmas

H. Takahashi et al., (invited)
Study of transition phenomena based on poloidal ion viscosity using a biasing electrode in helical system

N. A. Pablant et al.,
Investigation of ion and electron heat transport of high-$Te$ ECH heated discharges in the Large Helical Device

S. Satake et al.,
Benchmark of local and non-local neoclassical transport calculation in Stellarators and Heliotron

E. Ascasibar et al.,
Influence of electron cyclotron heating on the properties of NBI-driven Alfvén eigenmodes observed in the TJ-II stellarator