

# The Second A3 Foresight Workshop on Spherical Torus

Jan. 6-8, 2014,

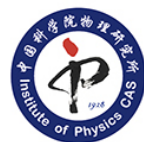
Tsinghua University, Beijing, China

## Organized by:

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Institute of Physics, Chinese Academics of Science  
Southwestern Institute of Physics

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# Agenda

Monday (Jan. 6 2014)	Tuesday (Jan. 7 2014)	Wednesday (Jan. 8 2014)
	Morning: Reconnection and Startup: 5 Reconnection and Startup: 5	Morning: rf Current Drive: 5 Diagnostics: 4
Afternoon: Registration Overview: 6 RCM	Afternoon: rf Current Drive: 5 Diagnostics: 6	Afternoon: Neutron Source and MHD: 5 Diagnostics: 6 Summary: 1

- all sessions @ Room 105, Liu-Qing Building(□ □ □ ), Tsinghua Univ.
- Presentation type:
  - ✓ 25min =20 min +5min discussion
  - ✓ 15min =12 min +3min discussion

## **Monday, Jan. 6, 2014 (Day 1<sup>st</sup>)**

**12:30- 14:00 Lunch** at Jin Chun Yuan (金 春 园 ) restaurant

**14:00- 14:30 Registration**

**14:30- 14:40 Opening** Z. Gao (Tsinghua U, China)  
Y.S. Hwang, (SNU, Korea) and M. Inomoto(Tokyo U, Japan)

**14:40-17:10 Overview** Chair: Prof. Z. Gao

14:40-15:05 Overview of EAST H mode Plasma	L. Wang
15:05-15:30 Overview of UTST/TS-4 experiment	M. Inomoto
15:30-15:55 Overview of Vest experiment	Y.S. Hwang
15:55-16:20 Experimental progress on HL-2A	L. W. Yan
16:20-16:45 Overview of TST-2 experiment	Y. Takase
16:45-17:10 SUNIST: present status and future plan	Y. Tan

**17:10-17:30 Coffee Break**

**17:30-18:20 Research Coordinate Meeting**

17:30-17:40 Chinese Plan for 2014

17:40-17:50 Korea Plan for 2014

17:50-18:00 Japanese Plan for 2014

18:00-18:20 Discussions (logistics for future activities, future seminar and summer schools, etc)

**18:30-20:30 Reception** at Jin Chun Yuan (金春园) restaurant

## **Tuesday, Jan. 7 ( Day 2<sup>nd</sup> )**

### **9:00-10:25 Reconnection and Startup** Chair: Prof. Y. Takase

- 9:00-9:25 Physical picture of 2-1/2 dimensional collisionless driven magnetic reconnection Prof. C. Z. Cheng
- 9:25-9:40 Plan for helicity Injection In VEST Mr. J. Y. Park
- 9:40-9:55 Floating potential measurement of magnetic reconnection with strong guide field in UTST merging experiment Mr. K. Yamasaki
- 9:55-10:10 Effective Pre-ionization using Fundamental Extraordinary Mode with XB Mode Conversion in VEST Mr. J. G. Jo
- 10:10-10:25 Local Structures of Electron Temperature and Electrostatic Potential during ST Merging Startup Mr. B.X. Gao

### **10:25-10:45 Coffee Break and Group Photo**

### **10:45-12:00 Reconnection and Startup** Chair: Prof. L. W. Yan

- 10:45-11:00 Numerical Simulation of Ohmic Breakdown Phenomena in a Tokamak Mr. M.-G. Yoo
- 11:00-11:15 Ultra high-Beta ST start-up experiment in TS-4 Mr. Y. Kaminou
- 11:15-11:30 Estimation of Plasma Position and Shape in VEST Mr. J. W. Lee
- 11:30-11:45 Equilibrium reconstruction of SUNIST plasma Ms. Y. Z. Jiang
- 11:45-12:00 Study on the Effect of ECH/EBW Mode Conversion on the Wall Reflection with Polarized Slit Mr. H.Y. Lee

### **12:00-14:00 Lunch** @ Zhi Lan Yuan (□ □ □ ) restaurant

**14:00-15:45 rf Current drive** Chair: Prof. Y. S. Hwang

14:00-14:25 LHCD Experiment in EAST Prof. B.J. Ding

14:25-14:50 Two-Fluid Equilibrium Considerations of  $T_e/T_i \gg 1$ , Collisionless ST Plasmas Sustained by RF Electron Heating

Dr. M. Y-K Peng (presented by Prof. Y. Takase)

14:50-15:15 Heating and CD by LHW and ECW on HL-2A

Prof. X.Y. Bai

15:15-15:30 Parametric instability during LHW injection into inhomogeneous plasma

Ms. A.H. Zhao

15:30-15:45 Simulation of Synergetic Drive by ECW and LHW

Mr. S.Y. Chen

**15:45-16:05 Coffee Break**

**16:05-17:35 Diagnostics** Chair: Prof. M. Inomoto

16:05-16:20 Preliminary Result of Space Potential Measurement by a Heavy Ion Beam Probe in LATE

Mr. T. Shigemura

16:20-16:35 Development of Electron Temperature Diagnostics System in VEST

Mr. J. M. Jo

16:35-16:50 Electrostatic waves in the Electron Cyclotron Frequency range during Spherical Tokamak Merging

Mr. A. Kuwahata

16:50-17:05 Conceptual Design of Single Point Thomson Scattering System for VEST

Mr. Y.G. Kim

17:05-17:20 Development of a local current diagnostic using a small Rogowski coil on TST-2

Mr. H. Furui

17:20-17:35 Application of Tomographic Ion Doppler Spectroscopy Technique in TS-3, TS-4 and MAST

Dr. H. Tanabe

**18:00 Dinner** at Jin Chun Yuan (□ □ □ ) restaurant

**Wednesday, Jan. 8 ( Day 3rd)**

- 9:00-10:35 rf current drive** Chair: Prof. B. G. Hong
- 9:00-9:25 ICRF Experiment in EAST Prof. X.J. Zhang
- 9:25-9:50 rf Force and current/flow drive Prof. Z. Gao
- 9:50-10:05 Non-inductive plasma current start-up using the lower hybrid wave excited by an electrostatically-coupled comblaine antenna on TST-2  
Mr. T. Shinya
- 10:05-10:20 Progress of Alfvén wave experiment in SUNIST  
Mr. Y. Tan
- 10:20-10:35 Performance evaluation of the TST-2 electrostatically-coupled comblaine antenna using COMSOL  
Mr. T. Inada
- 10:35-10:55 Coffee Break**
- 10:55-11:55 Diagnostics** Chair: Prof. B. J. Ding
- 10:55-11:10 Ion Doppler Measurement of Reconnection Heating in MAST Merging Experiments  
Mr. T. Watanabe
- 11:10-11:25 Spectroscopy Diagnostics in SUNIST Mr. H.Q. Xie
- 11:25-11:40 Construction of the spatial scanning interferometer system with CO<sub>2</sub> laser  
Mr. T. Tarucha
- 11:40-11:55 Development of Mach probe for ion flow measurement in VEST  
Mr. S.M. Yang

**12:00-14:00 Lunch** @ Zhi Lan Yuan (□ □ □ ) restaurant

**14:00-15:20 Neutron Source and MHD** Chair: Prof. C. Z. Cheng

14:00-14:25 Characteristics of Transmutation Reactor based on LAR Tokamak

Neutron Source Prof. B.G. Hong

14:25-14:50 Mitigation of Kink modes in Pedestal Prof. Z. T. Wang

14:50-15:05 Conceptual neutronics analysis for a spherical torus fusion demo reactor blanket with a self-consistent system analysis code

Mr. J. Kang

15:05-15:20 Simulation of Energetic Particle Behavior in Spherical Tokamak

Ms. M.L. Mu

15:20-15:35 Experimental plan of active perturbed Alfvén eigenmodes in SUNIST

Mr. Y.Q. Liu

**15:35-15:55 Coffee Break**

**15:55-17:25 Diagnostics** Chair: Prof. Z. T. Wang

15:55-16:10 Soft X-ray measurement in RF driven plasmas on QUEST

Mr. H. Miura

16:10-16:25 Measurement of ion temperature and flow in RF-start up plasmas on TST-2

Mr. S. Tsuda

16:25-16:40 Internal electrostatic and magnetic measurement in SUNIST

Ms. S. Chai

16:40-16:55 Measurement of the internal reconnection event using a double-pass Thomson scattering system on TST-2

Mr. K. Nakamura

16:55-17:10 Design of Middle Chamber Internal Magnetic Probe in VEST including Thermal Considerations

Mr. J.-H. Yang

17:10-17:25 Radial X-ray profile measurement on TST-2

Mr. K. Imamura

**17:25-17:40 Close**

**18:00 Banquet** at Quan Ju De (□ □ □ ) Restaurant