第15回 ITPA（SOL/DIV）の概要

大阪大学　大学院工学研究科　上田良夫

PWI 合同研究会
平成23年　7月20日- 22日

筑波大学プラズマ研究センターシンポジューム
プラズマ物理クラスター スクレープオフ層とダイバー タ物理サブクラスター(第1回会合)
炉工学クラスター ブランケット サブクラスター(第2回会合)
双方向型共同研究会合「ガンマ10装置における炉壁材料の損耗・再堆積の研究と
そのダイバータ開発戦略における位置づけ」

会合概要

- 日程
  - 2011年 5月16日（月）-19日（木）
- 開催地
  - Dipoli Center, VTT　(Helsinki, Finland)
- 参加者数：63名（48名）括弧内は前回の参加者数
  - 日本からの参加者（敬称略）：芦川、増崎（NIFS）、仲野（JAEA）、上田（阪大）、吉田（九大）
- 次回の予定：16th DivSOL ITPA meeting
  - Date : January 16 – 19 (2012)
  - Location : Jülich (Germany)
  - Host : FZJ

May 16, 2011 Agenda of 15th SOL/DIV meeting

1	**Fuel retention （報告：芦川）**	
	MD simulations	what can MD bring to PWI modelling ?
		MD simulations of PWI at ASIPP
		Hydrogen transport in tungsten
		The Interaction of H/T with Be and C from Density Functional Theory calculation - Formation of mixed Be/C materials
		Hydrogen retention in W - A Multiscale Approach
		MD simulation of H and He defects in W
		Modeling tungsten surfaces exposed to low-energy He/H plasmas on extended time scales (beyond MD)
2	**Fuel removal （報告：芦川）**	
		Be flash heating
		W flash heating
		D reabsorption by depleted codeposits
		deuterium retention in neutron-irradiated tungsten
3	Fuel retention R&D	
4	**Dust （報告：芦川）**	
		Introduction
		Dust ejection experiment using sphere carbon dust with different diameters in LHD
		First results of a new dust campaign at TEXTOR / DIIID
		Large size high velocity dust observed in KSTAR + First experiment in TReD device (Transport and Removal Experiment of Dust) Modification of CDG for dust detection
		dust generation in T-10 and QSPA + Dust immobilization in tokamaks
		Dust investigations in AUG (collection, classification, comparison to lab measurements)

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5	**Heat flux （報告:増崎）**	
	A. Steady state heat flux experiment	Introduction
		TS analysis
		JET analysis
		Summary of US effort, DIII-D, C-mod and NSTX
		Discussion
	B. Steady state heat flux theory	Chair R. Pitts
		Theory review
		An Heuristic Drift-Based Model of the Power Scrape-Off Width in H-Mode Tokamaks
		SOL current contribution to heat flux
		Discussion
	C. ELM heat flux	Chair R. Pitts
		DIII-D analysis
		Impact of ELM mitigation with RMPs in AUG on edge parameters
		Discussion
6	D. Detachment modeling	Chair T. Leonard
		Validation of detached L-mode plasmas in DIII-D, AUG, and JET with UEDGE".
		SOLPS grid
		SOL current contribution to heat flux
		Discussion
7	Heat flux R&D	Discussion
8	**Fuel retention in gaps （報告:増崎）**	
		Tritium retention in gaps of the tile in JT-60U
		Erosion/deposition, and retention in gaps in KSTAR.
		Studies of hydrocarbon cracking and transport into gaps in TJ-II

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9	**Material migration （報告:上田）**	
	Main chamber migration	Introduction
		intended presentation on modelling of ITER wall erosion/deposition
		medium scale modelling of ITER main chamber eorison/redeposition
		WallDYN applied to JET
		13C injection experiments in AUG and their modeling using DIVIMP and ASCOT, with the focus on the main chamber
		Long term tracer experiments for erosion / redeposition pattern on the first wall
		Discussion
10	**Be erosion （報告:上田）**	
		New data on Be erosion obtained with QSPA plasma guns at ITER-like ELMs simulations
		Erosion/deposition balance in Be seeded high flux D discharges
		Discussion
11	Material migration R&D	
		Discussion
12	**W damage （報告:上田）**	
		Transient heat load tests on monolithic tungsten with high repetition rates -
		W melt experiments in tokamaks -
		W melting and melt layer motion experiments in Pilot-PSI -
		Melting of tungsten sample and metal first wall in LHD -
		tungsten recristallization after melting/erosion
13	W R&D	Discussion

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16	**General modeling review**	
		Improved modeling of prompt redeposition by magnetic pre-sheath forces.
		Integrated SOLPS5.0-ERO modeling of carbon migration in the outer divertor of ASDEX Upgrade
		W modelling in SOLPS
		Discussion
17	**Plans for new experimental thrusts**	
		ILW plans →**報告（上田）**
		Status and plan of material related experiments on EAST
		preliminary results from the SOL measurements in the KSTAR machine including the plan for next campaign
		Discussion