

Agenda

Joint Working Session on SOL and PSI Modelling

Involved Work Packages and Projects:
WPJET1/WPJET2/WPMST1/WPPFC/WPCD/WPPMI/WPADC/ENR

Aix-Marseille University, Marseille, France

16/04–20/04/2018

The objective of this working session is to provide a discussion platform for current modelling and code development activities across the relevant Work Packages and Projects in EUROfusion. The emphasis is on identifying open issues, urgent near- and mid-term requirements, possible collaborations and proposals for supporting experiments within EUROfusion.

Chairs: Dmitriy Borodin and Antti Hakola

LOC: Yves Ferro

Webpage: <https://eurofusion-mod.sciencesconf.org/>

Main goals of the meeting:

- Exchange information and knowledge between the participating WPs and ENR projects on SOL, edge and PWI modelling and their interfaces.
- Discuss current key issues for advancing the modelling work across WPs and ENR projects.
- Train new participating PhD students.

Priorities for the meeting in 2018:

- 1) Interconnection between pedestal and SOL physics.
- 2) Physics processes behind global material migration and fuel retention in fusion devices with metallic walls. Extending and validating the physics data sets used in the codes.
- 3) Implementing different material parameters like surface shaping, morphology and roughness as well as ELMs and other transients into plasma-surface interaction codes.
- 4) Validating SOL and edge codes against experimental data on detachment, radiative power dissipation, and heat load distributions in various (standard and alternative) divertor configurations.

1. Monday (16/04) – Day of arrival

18:00-20:00	LOC	Registration at hotel Golden Tulip
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2. Tuesday (17/04):

Session A: Plasma boundary and SOL, detachment, seeding

Session organisers: Marco Wischmeier (marco.wischmeier@ipp.mpg.de)
Sven Wiesen (s.wiesen@fz-juelich.de)

09:00-09:10	LOC	Welcome
09:10-09:25	Session organisers	Guidelines for the session (circulated in advance)
09:25-10:00	Lomanowski / Groth	Validation / Edge models/ opacity (title tbc)
10:00-10:30	Marco Cavedon	Spectroscopy/AUG/opacity/molecular bands
10:30-11:00	David Tskhakaya	Modelling of ITER divertor sheath
11:00-11:30	Anders Nielsen	Coupling HESEL and EDGE2D-EIRENE using JET L-mode data
11:30-12:00		Coffee break
12:00-12:30	Steve Lisgo	OSM takes over the modelling world, or bust (most likely the second one, but fun to try)
12:30-13:00	Tillman Lunt	Alternative divertor configurations on AUG (title tbc)
13:00-13:30	Holger Reimerdes	Modelling of alternative configurations for DEMO
13:30-14:00	Mattia Siccino	DEMO scenario integration SOL/pedestal DEMO view
14:00-16:15		Late lunch break
16:15-16:45	Krzysztof Galazka	Reduced models (Corediv)
16:45-17:15	Hugo Bufferand, Paolo Innocente	SOLEGE2D: modelling of JET-C30C, TCV
17:15-17:45	Ferdinand Hitzler	High Radiation AUG and/or JET
17:45-18:45	All	Session A discussion
20:00-		Dinner time

3. Wednesday (18/04):

Session B: Special session on SOL-pedestal coupling

Session organisers: Marco Wischmeier (marco.wischmeier@ipp.mpg.de)
Sven Wiesen (s.wiesen@fz-juelich.de)

09:00-09:10	Session organisers	Guidelines for the session (circulated in advance)
09:10-09:35	Samuli Saarelma	JET pedestal / SOL coupling
09:35-10:00	Mike Dunne	AUG pedestal / SOL coupling
10:00-10:25		Coffee break
10:25-11:00	James Simpson	EDGE2D-EIRENE simulations of the upstream separatrix temperature in JET with fueling and seeding
11:00-12:00	All	Session B discussion
12:00-14:00		Lunch Break

4. Wednesday (18/04):

Session C: Plasma-wall interaction and impurity migration

Session organisers: Andreas Kirschner (a.kirschner@fz-juelich.de)
Klaus Schmid (klaus.schmid@ipp.mpg.de)

14:00-14:15	Session organisers	Guidelines for the session (circulated in advance)
14:15-14:45	Klaus Schmid	Impurity transport in EMC3
14:45-15:15	Aneeqa Khan	WallDYN + DIVIMP for JET and ITER
15:15-15:45	Dirk Reiser	Effect of plasma fluctuations on PWI
15:45-16:15		Coffee break
16:15-16:45	Juri Romazanov	ERO2.0 modelling of Be erosion and migration in JET-ILW
16:45-17:15	Taina Kurki-Suonio	ASCOT modelling for TEXTOR
17:15-18:15	All	Session C Discussion
20:00-		Dinner time

5. Thursday (19/04):

Session D: Processes in Plasma Facing Materials

Session organisers: Antti Hakola (antti.hakola@vtt.fi)
Yves Ferro (yves.ferro@univ-amu.fr)

09:00-09:10	Session organisers	Guidelines for the session (circulated in advance)
09:10-09:35	Elnaz Safi	Accelerated MD technique to study D irradiation on Be surface
09:35-10:00	Dmitry Matveev	Rate-Equation modelling of D in Be
10:00-10:25	Lei Chen, Michael Probst	Surface Stabilities of W/Be materials from DFT calculations
10:25-10:55		Coffee break
10:55-11:20	Zacchary Piazza	Coverage dependent mechanisms of H on W by DFT
11:20-11:45	Julien Denis	Impact of dynamic desorption on the Scrape-Off Layer in H-mode JET discharge
11:45-12:30	All	Session D Discussion
12:30-14:15		Lunch Break

6. Thursday (19/04):

Session E: Physics of plasma-material interface due to surface shaping and morphology

Session organisers: D. Borodin (d.borodin@fz-juelich.de)
K. Krieger (krieger@ipp.mpg.de)

14:15-14:30	Session organisers	Guidelines for the session (circulated in advance)
14:30-15:05	Alina Eksaeva	ERO2.0 modelling of surface roughness impact on erosion of W in PSI-2
15:05-15:30	Rodrigo Arredondo Parra	Static and Dynamic 3D-SDTrimSP simulations and validation experiments
15:30-15:55	Michael Komm	Particle-in-cell modelling of thermionic emission from tungsten surfaces at oblique magnetic field
15:55-16:25		Coffee break
16:25 -16:50	Michael Komm (for R. Dejarnac)	Plasma interaction in gaps of castellated plasma-facing components

16:50-17:15	Irina Borodkina (with support by David Tskhakaya)	Sheath effects at oblique fields, shaped PFC and ELMs
17:15-17:40	Jamie Gunn	Evaluation of alternative monoblock shaping solutions at ITER divertor vertical targets
17:40-18:30	All	Session E Discussion
20:00	All	Joint dinner at Hotel Golden Tulip

7. Friday (20/04):

Session F: Dust transport and sources

Session organiser: Greg De Temmerman (Gregory.DeTemmerman@iter.org)

09:00-09:30	Ladislav Vignitchouk	MIGRAINE studies of Be dust migration after VDEs and MDs in ITER
09:30-10:00	Andrea Uccello	DUSTTRACK modelling of Be dust transport in JET-ILW
10:00-10:20	ALL	DUST discussion
10:20-10:30		Coffee break

8. Friday (20/04):

Summaries, general discussion and implications for ITER

Session organisers: Antti Hakola (antti.hakola@vtt.fi)
Dmitriy Borodin (d.borodin@fz-juelich.de)

10:30-11:10	All	Summary A+B+C "Plasma Boundary & Pedestal"
11:10-11:50	All	Summary C+D+E "PSI and materials"
11:50-12:30	All	General Discussion, meeting conclusions, outlook
12:30-14:00		Lunch break
14:00		Adjourn