

**Max-Planck Center for Plasma Physics  
Working Group Meetings  
Princeton Plasma Physics Laboratory  
October 28 - 29, 2013**

**Monday, October 28 (Room B318, PPPL)**

- 8:30 Shuttle pickup at Sonesta Hotel – to Westin Hotel  
8:40 Shuttle pick-up at Westin Hotel – to Princeton Plasma Physics Laboratory  
9:00 Introductory meeting of whole group  
*Discussion of purpose, format for Monday, Tuesday*  
9:30 Parallel working meetings of four topical groups  
*Focus on plans and in-depth discussions of recent results. The outcome of the 2 day meeting should be physics discussion of details and refined plans for collaborations.*

***Detailed programs for each of the four working group sessions are shown below***

- 6:10 Shuttle departure to Salt Creek Grille  
6:30 Wine/Cheese reception, Salt Creek Grille (located next to Westin Hotel)

**Tuesday, October 29**

- 8:15** Shuttle pickup at Sonesta Hotel – to Westin Hotel  
**8:30** Shuttle pick-up at Westin Hotel – to Princeton Plasma Physics Laboratory  
9:00 Continuation of working group meetings  
2:00 Working group reports (B318)  
**4:30** **MPPC group discussion - Auditorium**  
**5:30** Adjourn  
**5:35** Shuttle departure to Westin Hotel/Sonesta

---

**Working Group Programs**

**Magnetic Reconnection Working Group – ROOM B318**

*Each talk below should consist of ½ of the allocated time for the latest results and ½ of the time for discussions.*

Monday

*Session 1. Local reconnection physics - influence of guide field*

9:30 Neeraj Jain: “EMHD reconnection and suggestions for experiments”

10:00 Adrian von Stechow: "Electromagnetic fluctuations in the VINETA II guide field reconnection experiment"  
10:30 break  
11:00 Jongsoo Yoo: "Asymmetric reconnection in MRX"  
11:30 Will Fox: "Guide field dependence of reconnection"  
12:00 Ammar Hakim: "Integration of Kinetic Effects in Fluid Models of Magnetic Reconnection"

12:30 lunch

*Session 2. Global reconnection physics - 3D effects and plasmoids*

2:00 Yi-Min Huang: "Rapid Change of Field Line Connectivity in Stochastic Magnetic Fields"  
2:30 Davina Innes: "Solar reconnection – observations"  
3:00 Sven Bingert: "Simulation of solar eruptions"

3:30 break

4:00 Lijia Guo: "Theory and simulation of supra-arcade downflows in the solar corona"  
4:30 Jon Menard: "Kink instability driven by rotation shear and pressure in NSTX"  
5:00 Amitava Bhattacharjee, Per Helander and Stuart Hudson: "Self-Healing of Magnetic Islands in 3D Toroidal Plasmas"

5:30 Summary discussions for near-future action items

6:00 Adjourn

Tuesday

*Session 3. Focusing on Sawtooth reconnection in tokamaks*

9:00 Steve Jardin: "M3D-C1 modeling of tokamak sawtooth"  
9:25 Masaaki Yamada: "Proposed sawtooth experiments in ASDEX-U"  
9:45 Sibylle Günter: "Reconnection in plasmas with strong guide field at high S numbers"  
10:15 Isabel Krebs: "Progress on reduced MHD benchmark with M3D-C1"

10:30 Break

*Session 4. Focusing on reconnection in strongly magnetized current sheets*

11:00 Kyle Parfrey: force-free magnetospheric structure in the presence of current sheets  
11:15 Benoit Cerutti: acceleration of ultra-high-energy particles in relativistic reconnection and application to Crab Flares.  
11:30 Omer Bromberg: formation and collimation of relativistic jets in gamma-ray bursts.  
11:45 Alexander (Sasha) Philippov: PIC simulations of reconnection induced by interaction of strong Alfvén waves.

*12:00 Summary discussions for near-future action items*

12:30 lunch

2:00 Working group reports  
45 minute summaries of highlights from meetings (30 + 15 each)  
5:00 Adjourn

## **Energetic Particles Working Group – DISPLAY WALL – ROOM A104**

### Monday

9.30-11.00: CR transport: Weidl, Spitkovsky

11.15 - 12.30: Fast electrons: Soto-Chavez: "Chorus: the most energetic electromagnetic wave in the innermagnetosphere". Smith, Papp, (Boozer)

14.00- 15.30: RSAEs: Fu, Lauber/Schneller

15.45-17.00 EGAMs: Wang, Lauber for Biancalani

The above are short informal presentations pointing out the actual status and further plans

Tuesday morning: (individual meetings/discussions with other groups to be arranged)

## **Magnetorotational Instability Working Group– DIRECTORS CONF ROOM –B331**

### Monday

9.30-11.00 Experiment and diagnostics (Edlund, Gilson, Ji, Schartman, Wei)  
chaired by: Goodman

11.00-12.30 MRI saturation (Goodman+student, Stone) chaired by Ji

14.00- 15.30 MRI Dynamo (Bhattacharjee, Ebrahimi, Guilet(?)) chaired by Gressel

15.45-17.00 Kinetic MRI (Stone (Kunz)) MRI Numerics (Just, Verma)  
chaired by Jenko

Format: informal talks followed by round-table discussion

### Tuesday

9.00-12.30 Individual meetings/discussions, preparation of MRI group report

Mentioned times are to a certain degree flexible and schedule may be modified to allow for visiting parallel MRI related talks/discussions (e.g. talk by Jon Menard on MRI-related instabilities in NSTX (reconnection session)).

## **Turbulence Working Group – ROOM B252**

(There may be some adjustments in the schedule. Some of the talk titles are drafts.)

### Monday

9:30 - 10:00 Greg Hammett & Frank Jenko  
"Intro & Status of MPPC Turbulence Research"

10:00 - 10:30 Olaf Grulke (Magnetic Reconnection Session)  
"Guide field effects and turbulence effects in VINETA II"

10:30 - 10:45 Coffee break

10:45 - 11:15 Brett Friedman  
"BOUT++ Comparisons with LAPD Drift Wave Turbulence Experiments"

11:15 - 11:40 Greg Hammett  
"The Discontinuous Galerkin (DG) algorithm and gyrokinetics"

11:40 - 12:00 Eric Shi  
"Application of a DG gyrokinetic code to a 1D ELM divertor heat pulse test problem"

12:00 - 12:30 Tobias Görler  
"Near-edge gyrokinetic simulations with GENE and comparison with experiments"

12:30 - 2:00 Lunch break

2:00 - 2:30 Alejandro Bañón Navarro  
"Sub-grid models in gyrokinetic turbulence"

2:30 - 3:45 Time for discussions & interactions on gyrokinetic code development

3:45 - 5:00 Jim Stone et al. (MRI Session)

### Tuesday

9:00 - 9:30 Ian Abel & George Wilkie  
"Adding energetic particles to the GS2 gyrokinetic code"

9:30 - 10:00 Bogdan Teaca  
"Local vs. nonlocal interactions in ITG and ETG turbulence"

10:00 - 10:30 Jason Tenbarge  
"Gyrokinetic simulations of magnetic reconnection"

10:30 - 10:45 Coffee break

10:45 - 11:15 Jason Tenbarge  
"Gyrokinetic simulations of Alfvén wave turbulence in the solar wind"

11:15 - 12:30 Time for discussions & interactions on gyrokinetic turbulence & reconnection