

**15th IEA International RFP Workshop**  
October 10-12, 2011  
H.F. Deluca Forum, Wisconsin Institutes for Discovery  
University of Wisconsin, Madison WI, USA

**Monday, October 10**

8:00 AM Registration, Coffee

8:40 AM Welcome

**Session 1 — Piero Martin, Chair**

8:45 AM High current operation in RFX-mod: Scenario development and density control

9:10 AM Scenarios for high-current operation in RELAX

9:35 AM Helical states, high toroidal field, and high current in MST

Roberto Cavazzana, Consorzio-RFX

Sadao Masamune, Kyoto Institute Tech.

Brett Chapman, UW-Madison

10:00 AM Break

10:25 AM Latest advances in system identification and synthesis of MHD controllers for EXTRAP T2R

10:50 AM RFP helical equilibrium reconstruction with V3FIT-VMEC

James Drake, KTH

David Terranova, Consorzio-RFX (by L. Marrelli)

11:15 AM Lunch, Sandwich Buffet

**UW Plasma Physics Seminar**

12:05 PM Non-axisymmetric equilibrium reconstruction - V3FIT

James Hanson, Auburn University

**Session 2 — Daniel Den Hartog, Chair**

1:15 PM RFP miscellanea

1:40 PM Time-resolved soft-x-ray imaging diagnostics for the study of MHD modes

2:05 PM Plasma boundary in RFX-mod: topology, flow and transport

2:30 PM Helical states with field reversal and finite beta in dissipative incompressible MHD

2:55 PM Outward impurity convection in RFX-mod RFP

Dominique Escande, CNRS-Aix-Marseille

Akio Sanpei, Kyoto Institute Tech.

Nicola Vianello, Consorzio-RFX

Ivan Khalzov, UW-Madison

Marco Valisa, Consorzio-RFX

3:20 PM Break

3:45 PM Two-fluid effects on tearing and relaxation

4:10 PM MHD simulations of the RFP with anisotropic thermal conductivity

4:35 PM Modeling the sawtooth cycle and stochastic transport in MST

5:00 PM Suppression in a coherent structure of localized current and vorticity

Carl Sovinec, UW-Madison

Marco Onofri, University of Calabria

Josh Reusch, UW-Madison

Juhyung Kim, UW-Madison

5:30 PM Tours of HSX, MST, Pegasus

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**Tuesday, October 11**

8:00 AM Registration, Coffee

8:25 AM Announcements

**Session 3 — Sadao Masamune, Chair**

8:30 AM	KTX: A new reversed field pinch program in China	Jinlin Xie, USTC
8:50 AM	Discussion on the KTX program, capabilities, and device design	
9:50 AM	Active MHD control experiments in RFX-mod RFP and tokamak discharges	Lionello Marrelli, Consorzio-RFX
10:15 AM	Break	
10:45 AM	Electrostatic mode locking and mode suppression in RFPs	Richard Nebel, Tibbar Technologies
11:10 AM	Control of ideal and resistive MHD modes in RFPs with a resistive wall	John Finn, LANL
11:35 AM	Pellet injection experiments on MST	Kyle Caspary, UW-Madison
12:00 PM	Lunch (IEA Executive Committee Meeting during Lunch)	

**Session 4 — James Drake, Chair**

1:15 PM	Density transport analysis of RFX-mod SHAx states in 3D geometry	Rita Lorenzini, Consorzio-RFX (by F. Auriemma)
1:40 PM	Progress in characterization of low-A RFP plasmas	Kensuke Oki, Kyoto Institute Tech.
2:05 PM	High resolution SXR emissivity and two-foil Te characterization in RFX-mod helical states	Alberto Ruzzon, Consorzio-RFX
2:30 PM	Improved performance and evidence of separatrix formation in HIT-SI	David Ennis, University of Washington
2:55 PM	MHD effects with oscillating loop voltages	Karsten McCollam, UW-Madison
3:15 PM	Break	
3:45 PM	Plasma heating and suppression of core mode amplitude during NBI on MST	Jay Anderson, UW-Madison
4:05 PM	Energetic ions in the RFP: Creation and Confinement	Daniel Den Hartog, UW-Madison
4:25 PM	Momentum transport experiments with neutral beam injection on MST	Mark Nornberg, UW-Madison
4:45 PM	Measurement, modeling, and analysis of the neutral density profile in MST	Scott Eilerman, UW-Madison
5:15 PM	Informal Social Hour, The Sett, Union South	
6:30 PM	Workshop Banquet, Wisconsin Institutes of Discovery	

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**Wednesday, October 12**

- 8:00 AM Coffee  
8:25 AM Announcements

**Session 5 — Marco Valisa, Chair**

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|----------|---|-------------------------------|
| 8:30 AM  | Microturbulence studies in RFX-mod  | Fabio Sattin, Consorzio-RFX   |
| 8:55 AM  | Gyrokinetic studies of microtearing modes   | Daniel Carmody, UW-Madison    |
| 9:20 AM  | Internal Measurements of Density and Magnetic Fluctuations in MST-RFP               | Liang Lin, UCLA               |
| 9:45 AM  | Experimental studies of high-frequency electrostatic and magnetic turbulence in MST | Derek Thuecks, UW-Madison     |
| 10:10 AM | Break   |                               |
| 10:40 AM | Technical progress in MHD active control at RFX-mod                                 | Anton Soppelsa, Consorzio-RFX |
| 11:05 AM | Stabilization of the resistive wall mode by a rotating shell                        | Carlos Paz-Soldan, UW-Madison |
| 11:30 AM | Error field assessment from driven rotation of external kinks at Extrap-T2R         | Francesco Volpe, UW-Madison   |
| 11:55 AM | Lunch   |                               |

**Special Discussion: Directions for RFP Research — Dominique Escande, Chair**

*Discussion starters will have short 5-10 minute presentations to introduce and guide discussion*

- 1:00 PM Developing the RFP reactor concept  
1:45 PM Synergistic research with tokamaks, stellarators, etc  
2:30 PM Basic science opportunities  
3:00 PM Closing

*Discussion Starters*

- John Sarff, UW-Madison  
Piero Martin, Consorzio-RFX  
Mark Nornberg, UW-Madison