

Agenda

Renew Workshop Theme 5 – Optimizing the Magnetic Configuration
March 16-20, 2009
Princeton Plasma Physics Laboratory

Monday

8:30 – 9:00 Registration

Morning (Zarnstorff, chair)

9:00 – 9:30 Introduction and Goals (John Sarff)

9:30 – 10:40 Theme 1 and 2 report and discussion

10:40 – 11:00 coffee break

11:00 – 11:30 Theme 4 report and discussion (Wayne Meier, remote)

11:30 – 12:00 Theme 3 report and discussion (Rajesh Maingi)

12:00 – 1:00 lunch

Afternoon (Hooper, chair):

1:00 – 1:30 Status on the ST Panel (Steve Sabbagh)

1:30 – 2:00 The MAST and other international ST programs (Brian Lloyd)

2:00 – 2:30 discussion

2:30 – 2:50 coffee break

2:50 – 3:20 Status on the RFP Panel (Hantao Ji)

3:20 – 3:50 The RFX and other international RFP programs (Piero Martin)

3:50 – 4:20 discussion

4:30 – 6:00 Panel breakout: discussion (parallel session)

Tuesday

Morning (Ji, Chair):

8:30 – 8:35 Overview of CT Panel (Bick Hooper)

8:35 – 8:50 Opportunities for the Compact Torus (Simon Woodruff)

8:50 – 9:05 FRC status (Richard Milroy)

9:05 – 9:20 Spheromak status (Bick Hooper)

9:20 – 9:30 CT thrusts and summary

9:30 – 10:00 discussion

10:00 – 10:20 coffee break

10:20 – 10:50 Status on the Stellarator Panel (David Anderson)

10:50 – 11:20 The international stellarator program and collaboration (Hutch Nielson)

11:20 – 11:50 discussion

11:50 – 1:00 lunch

Afternoon (Sabbagh, chair):

1:00 – 1:10 Goals for the cross-configuration task force (Michael Zarnstorff)

1:10 – 2:50 Public input, multi configuration related

Richard Buttery	15+5	The Need for a Fusion Science Integration Experiment in the US
Mike Kotschenreuther	15+5	Severe divertor issues on next step devices, and validating the Super-X divertor as a promising solution
Leonid Zakharov	15+5	LiWall ST1, EAST1, ITER-100 - all exceeding ignition criterion
Allen Boozer	15+5	Non-Axisymmetric Shaping as a Research Thrust
Carl Sovinec (combined with Harry McLean et al)	20+5	Computational Needs for Reversed-Field Pinch and Spheromak Development ; Cross-cutting Connections between the Spheromak and the Reversed-Field Pinch

2:50 – 3:10 coffee break

3:10 – 4:50 Continue, public input, multi configuration related

Daniel Den Hartog	15+5	Measurement needs for the alternates, with broader connections
Dick Majeski	15+5	Potential impact of low recycling equilibria and lithium walls on reactor design
Rob Goldston	15+5	Requirements for a confinement device with a goal to develop tritium breeding blanket modules, base on FESAC Fusion Development Path Plan
Wendell Horton	15+5	Axisymmetric Tandem Mirror D-T Neutron Source
Richard Nygren	15+5	Future Plasma Facing Components (PFCs) & In-vessel Components (IVCs): Strengthened Sustained and Integrated Approach for Modeling and Testing HHFCs

4:50 – 5:20 discussion

5:30 – 6:30 Cross configuration task force meeting (open)

Wednesday

Morning:

8:30 – 12:00 Panel breakout: public input, configuration specific (parallel sessions)

12:00 – 1:00 lunch

Afternoon:

1:00 – 5:30 Panel breakout: discussion (parallel sessions)

5:30 – 6:30 Cross configuration task force meeting (open)

Thursday

Morning (Sarff, chair):

8:30 – 9:15 Thrust update + discussion, Stellarator

9:15 – 10:00 Thrust update + discussion, CT

10:00 – 10:15 coffee break

10:15 – 11:00 Thrust update + discussion, RFP

11:00 – 11:45 Thrust update + discussion, ST

12:00 – 1:00 lunch

Afternoon:

1:00 – 2:00 Cross-configuration thrust discussion

2:00 – 2:30 Summary discussion

2:30 – 5:30 Panel breakout: prepare next steps (parallel session)

5:30 Meeting end

Wednesday morning Panel Breakout Agenda

CT Panel

8:30 – 8:45	P. Bellan	Improving spheromak helicity injection by eliminating the constraint imposed by Paschen breakdown physics
8:45 – 8:50		discussion
8:50 – 9:05	A. Hoffman	Advances in Singly-Connected Closed Field Line Plasma Devices and Extrapolation to POP Level Experiments and Reactors
9:05 – 9:20	E. Bellova	Oblate FRC concept with NBI for experimental studies of large-s FRC formation, stability, current drive and transport
9:20 – 9:30		discussion
9:30 – 9:45	T. Intrator	Radio frequency sustainment and current drive for Compact Tori
9:45 – 9:50		discussion
9:50 – 10:00		<i>break</i>
10:00 – 10:20	J. Slough	Next Step Needs for FRC Stability And Sustainment Studies
10:20 – 10:30		discussion
10:30 – 10:45	S. Cohen	Improving energy confinement is the most rapid route to practical FRC reactors
10:45 – 10:50		discussion
10:50 – 11:05	T. Intrator	Reactor considerations for Compact Toroids
11:05 – 11:20	S. Woodruff	Harnessing fusion power: How does CT research contribute to this discussion
11:20 – 12:00		discussion

RFP Panel

8:30 – 8:55	L. Marrelli (remote)	Issues on active control of MHD instabilities in a RFP
8:55 – 9:20	P. Innocente (remote)	Density limits and control in RFP's
9:20 – 9:45	C. Sovinec	Computational Needs for Reversed-Field Pinch and Spheromak Development
9:45 – 10:10	P. Terry (remote)	Role of Theory in Addressing RFP Physics Issues
10:10 – 10:20		<i>break</i>
10:20 – 10:45	S. Masamune	A scenario for steady state low-aspect-ratio RFP sustained by pressure-driven and RF/NBI-driven currents
10:45 – 11:10	D. Majeski	Possible experiments on LTX to explore edge control for RFP
11:10– 11:35	N. Pomphrey	Helical RFP's – Benefit and Analysis
11:35 – 11:50	J. Sarff	Magnetic Island Overlap Threshold in RFP

ST Panel

9:00 – 9:15	M. Peng	Fusion Nuclear Science Research Thrust and the Required Full Fusion Nuclear Environment
9:15 – 9:30	R. Goldston	Contributions of NHTX to the ST Development Path
9:30 – 9:45	S. Diem	Research Thrust to Establish Predictive Simulation Capability for Fusion Nuclear Science
9:45 – 10:00	J. Canik	Limiting the Divertor Heat Flux to Enable Fusion Nuclear Science Research at Low-A
10:00 – 10:15	A. Sontag	Research Thrust on Plasma Startup & Ramp-up to Enable Fusion Nuclear Science Research at Low-A
10:15 – 10:30	J. Leuer	Solenoidless Startup Research Thrusts for Tokamaks
10:30 – 10:45	K. Tritz	Understanding and Predicting Microtearing Instabilities in the ST
10:45 – 11:00	R. Raman	Research Thrust on Plasma Startup & Ramp-up
11:00 – 11:15	R. Raman	Research Thrust on Advanced Plasma Fuelling
11:15 – 11:30	A. Reiman	Benefits of moderate 3D fields in Tokamaks-NHTX as an example

Stellarator Panel

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