Transport and Turbulence TSG

Yang Ren, TSG leader
Howard Yuh, TSG Deputy Leader
Greg Hammett, Theory & Modeling

FY11-12 Research Forum
March 15-18th, 2011
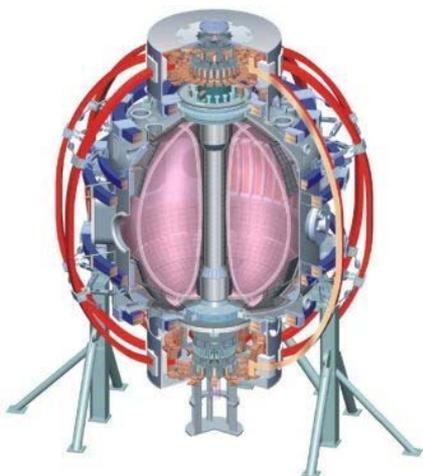
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Transport and Turbulence priorities for FY11-12

- Measure fluctuations responsible for turbulence particle and impurity transport (R11-1, 2012 JRT)

- Investigate mechanisms for turbulence electron thermal transport (R11-1, 2012 JRT)

- Confinement scaling to very low aspect ratio

- L-H transition physics

- Role of turbulence in driving intrinsic rotation and the ρ^* scaling of intrinsic torque

- **FY2012 Office of Fusion Energy Sciences 3 Facility Joint Research Milestone:**

  - The work will emphasize **simultaneous** comparison of model predictions with **experimental energy, particle and impurity transport levels** and **fluctuations** in various regimes, including those regimes with significant excitation of electron modes

Draft Agenda

Time	Speaker	Title	Requested	Minimum
9:00	Y. Ren	Introduction, run days guidance, priorities and FY11-12 capabilities		
9:05	S. Kaye	Multi-channel transport and related microturbulence (group XP)	3-4	3-4
	S. Kaye	L-H Threshold Power Study: Ramp-Up vs Steady Ip Phase	1	1
9:18	S. Kubota	Particle Transport Using Gas Puff Modulation	2	2
	S. Kubota	Search for GAMs Using Doppler Backscattering	1	0
9:31	V. Soukhanovskii	Development of diagnostic method and perturbative gas injection techniques for impurity, ion and electron heat transport studies	0.5	0.5
9:39	D. Clayton	Impurity Transport Measurements in the NSTX Plasma Edge	1	0.5
9:47	H. Yuh	Measurement of residual turbulence in ITBs and explaining the high-k bursts	1	1
9:55	E. Mazzucato	ETG Turbulence and Anomalous Transport in NSTX	2	1
10:03	Y. Ren	ExB Shear Effect on Micro-turbulence in L and H mode plasmas	1	0.5
	Y. Ren	Assessing the 2D k spectrum of high-k turbulence	1	0.5
10:16	W. Guttenfelder	Collisionality scaling of turbulence at high beta	1-2	1
	W. Guttenfelder	Polarimetry measurements of microtearing turbulence	0.5-1	0.5
10:29	D Smith	Assessment of core low-k turbulence and poloidal flow fluctuations	2	1
	D Smith	ETG turbulence in the k-theta, k-r plane	0.5	0.5
10:42	J. Hosea	Turbulence Characteristics for HHFW Saturated Stored Energy versus RF Power	1	0.5
10:50	K. Tritz	GAE effects on electron thermal transport	1	0.5
10:58	K.C. Lee	Measurement of density fluctuation for the study of transport and L-H power thresholds	1	1
11:06	T. Munsat	Dynamics of Zonal Flow-Drift Wave System Preceding L-H Transition	0.5	0.5
11:14	D. Battaglia	L-H power threshold for D and He plasmas using RF current drive with symmetric phasing	1	1
11:22	J. Lore	Effect of Radiated Power Fraction on Divertor Power Load and Core Confinement	1	0.5
11:30	J-k. Park	Intrinsic rotation in Ohmic L-mode and H-mode plasmas	0.75	0.5
11:38	C.C. Petty	Aspect Ratio Scaling of Transport With DIII-D	1	0.5
11:46	G.R. McKee	Dependence of Low-k turbulence properties on rho* in the ST	1	0.5
11:54	W.M. Solomon	Characterization of intrinsic torque and rho* scaling	1	1
		total	**26.75-29.25**	**18.5-19.5**

T&T Break-out Session from 9:00-1:00 pm at B252 on Wednesday, March 16th

- 24 XPs received at T&T TSG
  - Requesting 26.75-29.25 run days
  - A minimum of 18.5-19.5 run days is needed
- The run time guidance for T&T TSG is 8 days for 1st priority XPs and 2 days for 2nd priority XPs.
  - A factor of 3 oversubscription
- Proposed XPs covers R11-1 and 2012 JRT adequately.
  - Prioritization is needed to accommodate critical 1st priority XPs fulfilling milestones and some 2nd priority XPs.