

NSTX Overview presentation and papers – preparation

IAEA FEC 2012 (discussion on 8/13/12)

□ Presentation length

- Past talks: average of 13.5 slides in 17 minutes (0.8/min), suggests:
- Overview: (max) 20 slides in 25 minutes (+ 4 minutes for questions)

□ Presentation status / needs (thanks for material sent so far!)

- Working from NSTX PAC talk (approximately same length)
- Will update with most recent analysis from NSTX Team

□ Papers

- 12 page proceedings paper
- Nuclear Fusion paper (no length limit)

□ Paper Preparation

- Most contributors sent slides, not text – **please send text/references !**
- Some text available from EPS 2012 presentations, but not all topics are covered
- Will send further requests for input / seek out new results

NSTX Overview presentation and papers - schedule

IAEA FEC 2012

□ Talk

- Dry run: Sept 28th
- Single summary slide to IAEA by Sept 14th
- Aim for first draft to group by Sept 12th

□ 12 page proceedings paper

- Deadline: Sept 23rd
- Aim for draft to group by Sept 10th (in 4 weeks)

□ Nuclear Fusion paper

- Due either at the conference, or by the end of October
- Aim for draft to group by ~ Sept 10th (could be earlier than 12 pager)
- Aim to complete paper for submission at the conference

Note: Need to prepare early due to responsibilities on other IAEA papers + ITPA, (+APS, Mode Control mtg. talks) – will try to get drafts out earlier than stated

NSTX Overview presentation and papers - outline

IAEA FEC 2012 (I)

□ General

- Focus toward ST FNSF, pilot plant, DEMO; Leverage ST for ITER
- Bridge present analysis/results toward NSTX-U
- Talk to refer to other presentations at the conference

□ Topics (at present - 8/13/12) – will NOT be marked by TSG

- Transport: Dependence of τ_E on ν , nonlinear microtearing simulations /experiment, BES results, high-k turbulence measurements/theory, ExB stabilization of low-k turbulence / relation to high-k fluctuations, intrinsic rotation and relation to ∇T_i , ME-SXR transport analysis
- Lithium: continuous change of plasma characteristics, importance of O in pumping D, ELM stability via profile alteration, ELM precursors
- Macro-stability: stabilizing effects of reduced ν on global modes, dual field component active RWM feedback control/modeling, disruptivity analysis and detection, RWM state space control gain/phase results, disruption halo current characteristics, NTM rotation / polarization current (unpublished), NTV experiments examining offset rotation.

NSTX Overview presentation and papers - outline

IAEA FEC 2012 (II)

□ Topics - continued (at present - 8/13/12)

- Boundary: snowflake divertor, significant reduction in steady state and ELMing heat flux, improved by impurity seeded detachment, 3D field below ELM triggering and particle transport. Measured strike point splitting / comparison to modeling. Toroidal asymmetry of heat deposition during ELMs/3D fields. EHO observation/characterization. Pedestal scaling, structure, dynamics experiment / theory
- ASC: Long-pulse operation at high non-inductive fraction, predictions for NSTX-U non-inductive operating space
- Waves & EPs: Amplitude/structure of GAEs, core localized CAEs reflectometry measurements in H-mode, fast ion redistribution by kink modes and effect on CAE / comparison to theory. HHFW high non-inductive fraction experiments and modeling
- SFSU: Flux savings in ramp-up to 1 MA

Results of some recent papers & EPS 2012 not included in topics above.
Please NOTIFY ME of key topics not included ASAP (sabbagh@pppl.gov)