

**Turbulence Diagnostic Workshop, Thursday through Friday at noon, Jan. 18 - 19.**  
Breakpoint between days to be determined

**1. Charge of meeting**

- Physics goals: to clarify by the end of the meeting
  - What an optimal suite of fluctuation measurements should strive for on NSTX
- By the end of meeting: identify measurement strategies, strengths and limitations
  - Diagnostic options
  - Possibilities for comparison with theory

**2. Theory issues and opportunities:** Physics to aim for in turbulence measurements

- Issues to pursue that can extend existing toroidal physics database
- Ranges of  $k$  likely to be of interest in NSTX
- Turbulence dynamics relevant to high beta, low  $A$ , high rotational shear
- Turbulence dynamics issues of general physics interest accessible in NSTX
- Present theory tools and opportunities for direct comparison to data

**3. NSTX plasma characteristics** observed so far

- Density (core and edge), temperature, estimated  $q$  profile characteristics
- Dynamics of plasmas and confinement evolution
- Profile measurement prospects for 2001 - 2003

**4. Diagnostic access** on NSTX

- Present and possible future accommodations for turbulence diagnostics

**5. Core turbulence** measurement techniques

- What can a given technique provide that can be directly compared with theory
- Needs from NSTX for accommodation of techniques

**6. Edge turbulence** measurement techniques

- What can a given technique provide that can be directly compared with theory
- Needs from NSTX for accommodation of techniques

**7. Discussion of strengths and weaknesses** of various techniques

- Physics pros and cons (e.g.  $k$  range, time and space resolution)
- Technical feasibility

**8. Bringing together what we have heard**

- Reprise of physics goals, what proposed techniques can access, and what they cannot access
- Discussion of possible strategies, considering the range of techniques we will have heard

**9. Summary of discussion points**

- Outline of summary document of workshop; action items