



Proposal and Attendance Form for NSTX Research Forum 2001

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Please write in the boxes below a one-page abstract of your proposal to be presented:

Title: Edge Turbulence Measurements by Gas Puff Imaging

Abstract:

Edge turbulent filaments have been observed in large aspect ratio tokamaks (TFTR, ASDEX, Alcator C-Mod, DIII-D) over high recycling regions like RF antennas and limiters. These filaments have also been observed in NSTX (and MAST). In order to de-couple the filament observation from effects of natural edge recycling, we use in NSTX localized edge gas puffs that illuminate the edge structures. We then observe the edge region with high spatial resolution (i.e., Gas Puff Imaging or GPI) utilizing both, a Kodak fast-framing (i.e., Los Alamos) digital camera (1-4 kHz resolution) and a set of discrete viewing chords (200 kHz resolution). The goal being understanding the physics of edge turbulence and turbulent transport near the edge of the plasma. This is important for H-mode and other transport barrier physics, ICRF heating (wave coupling through edge), power and particle handling (SOL transport) and CHI (current penetration from edge into core). In addition, the evolution of the edge turbulence may be related to the density limits.

This work is being performed under the auspices of Experimental Proposal XP-10. Recent results and a summary of the planned experiments will be presented. We hope to interest theoretician in our results and plans to start/continue active interaction(s) regarding edge turbulence modeling.

<p>Choose only one topical session by inserting X for each proposal (Use separate forms for separate proposals)</p>	<p>2000 Results (mbell@pppl.gov) & 2001 Research Program (esynakowski@pppl.gov) (Please submit by January 10, 2001)</p> <p><input type="checkbox"/> ET1: Macroscopic Stability <input checked="" type="checkbox"/> ET2: Transport & Turbulence <input type="checkbox"/> ET3: High Harmonic Fast Wave & Electron Bernstein Wave <input type="checkbox"/> ET4: Coaxial Helicity Injection <input type="checkbox"/> ET5: Boundary Physics</p> <p>2002-2005 Research Opportunities (mpeng@pppl.gov) (Please submit by January 11, 2001)</p> <p><input type="checkbox"/> TG1: Noninductive Startup <input type="checkbox"/> TG2: Heating, Current Drive & Fueling <input type="checkbox"/> TG3: Macroscopic Stability <input type="checkbox"/> TG4: Transport & Turbulence <input type="checkbox"/> TG5: Energetic Particle Physics <input type="checkbox"/> TG6: Multiphase Interface (Boundary Physics) <input type="checkbox"/> TG7: Plasma Science User Research</p> <p>Fluctuations Measurement (esynakowski@pppl.gov) (Please submit by January 10, 2001)</p> <p><input type="checkbox"/> Fluctuations Measurement proposals</p>
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Select a presentation option by inserting X:

- Oral presentation in person
 Remote presentation via ShowStation and speakerphone
 Ask discussion leader to include in discussion
 No need to present, but include in meeting summaries
 Attend Forum only

Special Requests for your proposal (projector type, time constraints, etc.):

Projector for my laptop's VGA display (to show MPEG clips), usually a ShowStation is capable of displaying it ...if the appropriate cable is available.

Please return this document via e-mail attachment to jrobinson@pppl.gov, jsavino@pppl.gov, and the corresponding organizer listed above. Please e-mail questions or comments to the organizers listed above.