



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: Low frequency fishbone mode induced by circulating particles in spherical tokamaks

Abstract:

It is found that high β in low-aspect-ratio tokamaks tends to stabilize the fishbone instability in a plasma with energetic circulating ions. The stabilization results from enhancement of the toroidal precession by large Shafranov shift, which makes it difficult to reconcile the condition of considerable energy exchange between the ions and internal kink perturbation with the condition of the resonance wave-particle interaction. This result and previous theoretical prediction relevant to the trapped-particle-induced fishbone mode [1] indicate that when beta is sufficiently high the fishbone instability in STs is absent or weak. Experimental verification of this conclusion in the NBI experiments on NSTX is very desirable.

[1] Ya.I. Kolesnichenko, V.V. Lutsenko, V.S., Marchenko, Phys. Rev. Lett., 82, 3260 (1999).

<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 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 checked="" type="checkbox"/> TG5: Energetic Particle Physics <input type="checkbox"/> TG6: Multiphase Interface (Boundary Physics)</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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Special Requests for your proposal (projector type, time constraints, etc.):

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.