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: Beam Ion Loss Calculations Using Constants of the Motion Approach

Abstract: The constants of the motion (COM) approach allows rapid computation of guiding center orbits in an axisymmetric equilibrium. Although the guiding center approximation is not strictly valid in some NSTX equilibria (the magnetic moment is not well-conserved), previous work by D. Mikkelsen indicates that guiding center orbits are a very good approximation of the true beam ion orbits. Presently, calculation of the beam ion loss fraction by full orbit following requires about 100 hours of cpu time per case. We will apply the COM approach to calculate beam ion loss fractions for a few test cases for NSTX. If the loss fractions computed this way prove to be in reasonable agreement with full orbit calculations, this method will provide a much faster means of computing the loss fraction (using only a few minutes of cpu time per case).

Choose only one topical session by inserting X for each proposal (Use separate forms for separate proposals)

2000 Results (mbell@pppl.gov)
& 2001 Research Program (esynakowski@pppl.gov)
(Please submit by January 10, 2001)
__ET1: Macroscopic Stability
X_ET2: Transport & Turbulence
__ET3: High Harmonic Fast Wave & Electron Bernstein Wave
__ET4: Coaxial Helicity Injection
__ET5: Boundary Physics

2002-2005 Research Opportunities (mpeng@pppl.gov)
(Please submit by January 11, 2001)
__TG1: Noninductive Startup
__TG2: Heating, Current Drive & Fueling
__TG3: Macroscopic Stability
__TG4: Transport & Turbulence
__TG5: Energetic Particle Physics
__TG6: Multiphase Interface (Boundary Physics)

Fluctuations Measurement (esynakowski@pppl.gov)
(Please submit by January 10, 2001)
__Fluctuations Measurement proposals

Select a presentation option by inserting X:

__Oral presentation in person
__Remote presentation via ShowStation and speakerphone
X_Ask discussion leader to include in discussion
__No need to present, but include in meeting summaries

__Attend Forum only (in person or with remote access)

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.