NSTX-U

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NSTX-U Collaboration Status and Plans for: M.I.T. Plasma Science and Fusion Center

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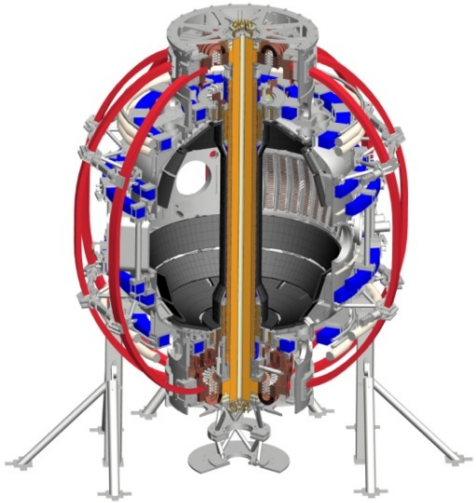
NSTX-U Collaborator Research Plan Meetings
PPPL – LSB B318
April / May 2014



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Research plans and needs for this year (FY2014) in preparation for NSTX-U operations in FY2015

- Formulation of ion damping in TORIC
  - interaction with high/intermediate harmonic fast waves.
- Benchmark with AORSA.
- Interaction of fast waves with neutral beam generated ions
  - non-Maxwellian distributions (Nicola Bertelli).
- Advantages of using TORIC
  - coupled to TRANSP;
  - parallel implementation;
  - fast turn around.

Research Plans for FY2015 beyond
(The years covered will depend on the duration of your present grant)

- Coordinate with experimental plans.
- Time dependent simulations
  - Scenario modeling
- High/intermediate harmonic waves for startup operations
  - heat electrons;
  - raise plasma β;
  - increase bootstrap current.
- Sensitivity of wave coupling to
  - plasma parameters;
  - plasma positioning
    - modeling of the scrape-off layer.
- Effect of edge fluctuations.

Ideas to enhance participation in NSTX-U research/program by U.S. Universities, early-career researchers, and students

- Financial commitment
  - 5-7 years.
- Long term vision.