# NSTX-U Five Year Plan Chapter 4 Status

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for the NSTX-U Boundary Physics Group

**NSTX-U Meeting
PPPL B318
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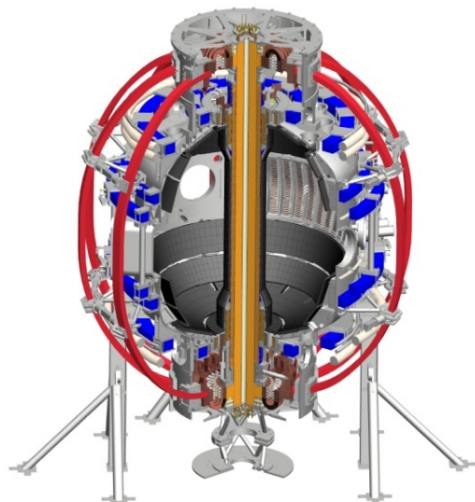
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NSTX-U Five Year Plan Boundary Physics Section: Progress to date

- "Introduction" not yet complete
  - Authors: Kaye, Maingi, Diallo, Zweben, Soukhanovskii, Canik
- "Overview of goals and plans" not yet complete
  - Authors: Soukhanovskii, Diallo, Maingi
- First draft of chapter is (nearly) complete
  - Much work remains on consolidation and revision
  - References to be expanded and reformatted
- Response to previous Program comments
  - Including additional figures and references to credit NSTX work
  - Missing sub-sections added (Divertor, LGI, etc)
  - Sub-sections moved to long range research (Bias plates, RDM, CT injection, pellet injection)
  - SOL transport section now includes turbulence and neoclassical drifts
  - Language has been changed to avoid "could" or "would"
  - Cryo-pumping section expanded

NSTX-U Five Year Plan Boundary Physics Section: Outstanding issues

- SOLC research – extent of inclusion is under discussion

- ELM research – not clear how to break and where to include
  - Physics of ELMs (MHD, transport, precursors)
  - ELM types and operational windows (confinement, magnetic configuration,..)
  - ELM SOL transport
  - ELMs in divertor (heat flux distribution, heat transport (cond vs conv)

- Impurity erosion and SOL transport – division with PFC Section needs to be reconciled and clarified