# Boundary diagnostic-optimized configuration (BDOC) for edge model validation

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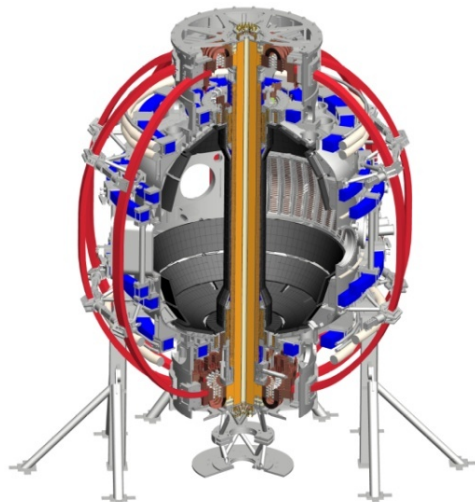
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# Develop and use one discharge scenario for edge transport and plasma-surface interaction model validation

- Run discharge periodically to accumulate database
  - Neutrals for cryopump
  - Recycling coefficients with boron and lithium
  - Multi-impurity erosion, redeposition and migration (Li, B, C, O, High-Z)
- Enable comparisons to and complementarity of various transport and PSI models
  - UEDGE, SOLPS, OEDGE, BOUT++, XGC
  - DEGAS 2, ERO, DIVIMP, TRIM, WallDyn, MD
- Two shapes: high triangularity and low triangularity (high-Z tile)
- Highly reproducible parameters: e.g., 4 MW, 0.8-1.0 MA, medium density, calibrated LFS fueling, probably H-mode, etc
- All core profiles, all divertor diagnostics, MAPP XPS are critical
- Examples of what this approach may yield for M&PFC TSG
  - Lithium surface chemistry (Li-C-O) and lithium coatings longevity
  - High-Z erosion by low-Z impurities
  - High-Z redeposition and migration