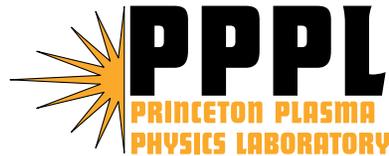


DEGAS 2 Modeling of NSTX

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MODELING OF GAS PUFF IMAGING EXPERIMENTS

- Zweben's turbulence visualization experiments used fast camera to record emission from gas puff,
- Neutral transport code (DEGAS 2) can be used to predict size & strength of emitting region,
 - Verify plasma profiles used in other models (BOUT),
 - Calculate neutral penetration into core.
- DEGAS 2 needs plasma density & temperature profiles everywhere,
 - NSTX diagnostics insufficient to do directly,
 - ⇒ take from UEDGE runs.
 - Will be using same runs as BOUT.

- Some of the experiments were done with He puff,
- He atomic and surface physics data needs to be added to DEGAS 2.
 - Have He + D⁺ elastic scattering differential cross sections from ORNL-CFADC,
 - * Need to be turned into rates, etc. and added to DEGAS 2.
 - Have two collisional radiative models for He ionization (Fujimoto),
 - * Complex model has 3 transported states (2 metastables),
 - * Simpler model analogous to H (only ground state kept).
 - * Almost have latter ready; should suffice for present case.
 - Got surface reflection data for C target from TRIM.