

Atomic Physics & Other Edge Issues

Daren Stotler, PPPL

- ADAS post-doc,
 - Being pursued by D. McCune,
 - Would greatly benefit NSTX, especially spectroscopy.
- Hydrogen molecular physics,
 - Data and models involving ro-vibrational effects improving,
 - May be significant at few eV temperature,
 - Or at high D₂ density (e.g., GPI).
- Methane (C_xH_y) breakup & surface sources,
 - Crucial for understanding T retention,
 - Need real-time, absolutely calibrated, diagnostics.
 - Likewise, require better data on particle fluxes to surfaces.

- Better understanding of private flux region,
 - Models requiring description of PFR rarely do well,
 - Particularly at high density with substantial recombination.
 - Even DIII-D's divertor Thomson scattering can be inadequate.
 - What other means are available for diagnosing it?
- Data on and models for SOL flows,
 - Codes need to model $\vec{E} \times \vec{B}$ and other drifts correctly and robustly.
- Experiments and codes to study ST kinetic effects,
 - Low aspect ratio effects,
 - Ion orbit loss?
 - Probe interpretation?