

Result showing power of calibrated VUV measurement through the transition to detachment

- A radiation shortfall has been found on multiple machines with multiple codes compared to experiments
- Direct measurement of the radiated power components of have been made on DIII-D
 - Unique combination of calibrated visible and VUV spectroscopy, impurity flow imaging, and divertor Thomson scattering
 - Agreement between integrated divertor radiated power from VUV and bolometry
- Relative strength of CIII, CIV and Ly- α emissions captured by UEDGE simulations with drifts
 - Radiative volume under-predicted by a factor of 3
 - Missing processes (radial transport/turbulence?) that distribute radiation deeper into the SOL
 - Unaccounted-for emission in spectra may be from molecules that are not fully tracked/accounted in codes

