LH power threshold scaling with X-point radius and the role of X-point loss

- Exp. Results: P_{LH} decreases with larger X-point radius
  - Also, P_{LH} lower for grad-B in favorable direction
  - Prior to LH transition, increased D_α at inboard divertor and ~ 1 kA divertor current toward the outboard divertor
    - Reverse effect for unfavorable grad-B
  - Edge T_e at LH transition is similar over a large range in heating power, neutral fueling and lithium conditions for a matched shape
- Connection to X-point loss and LH transition physics
  - Ion orbit loss can be a source of E_r at the plasma edge (sets a min $|E_r|$)
    - Transition is predicted to occur at some threshold E_rxB or E_rxB shear
  - Velocity hole calculations indicate:
    - Critical edge T_i for appreciable X-point ion loss (~ 100 eV) is about 60% larger for high-δ shape vs low-δ shape
    - Ions primarily lost to inboard (outboard) divertor for favorable (unfavorable)
    - Very sensitive to edge T_i (≈ T_e at edge) and magnetic geometry
  - Could also tie in P_{LH} vs I_p and/or P_{LH} vs d_{rsep} results
- Need/Strong Desire: XGC0 calculations