

RMP Database

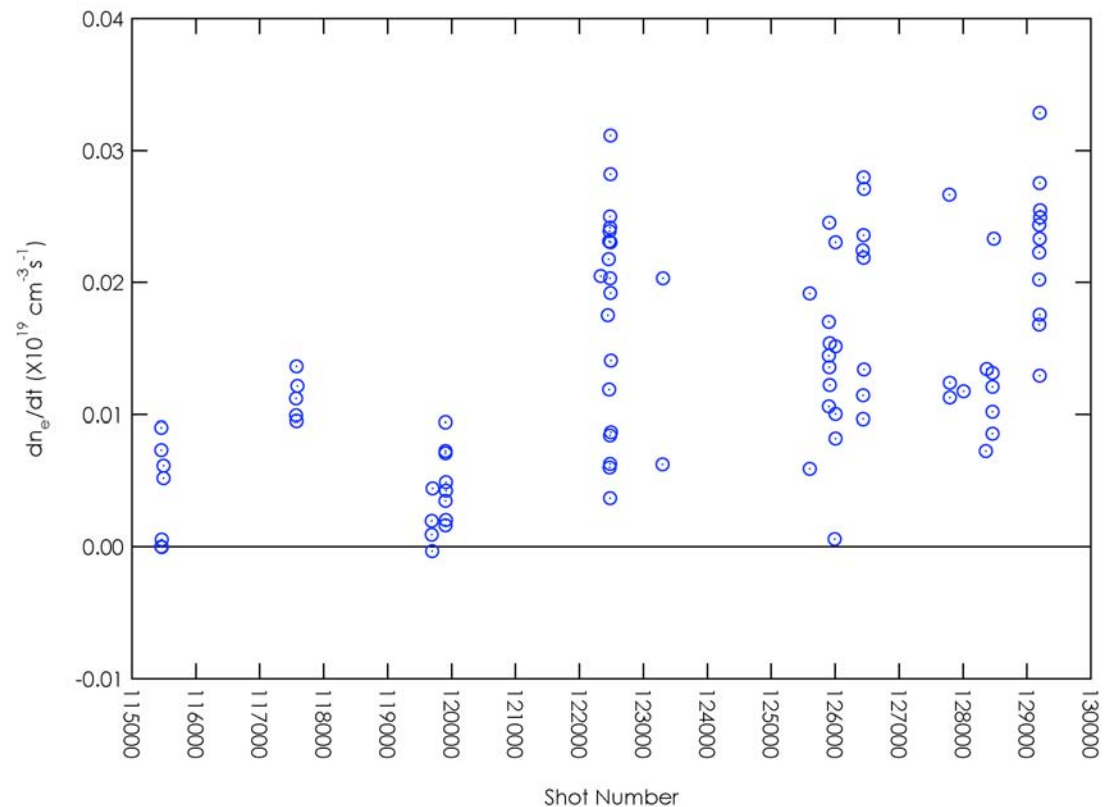
Intention

- Find interesting cases for further (detailed) analysis
- Characterize pot. trends to aid future experiments
 - Get ready for PSI

Discharge time history & background

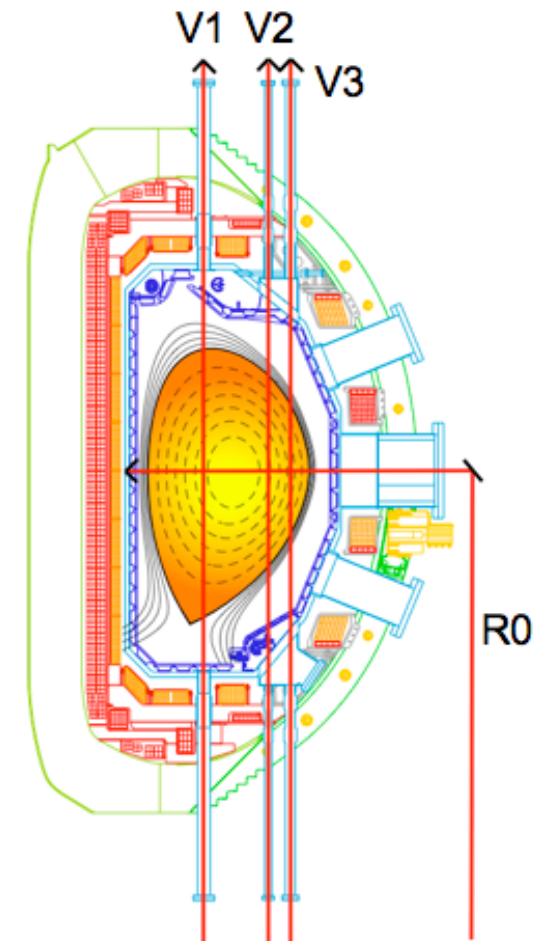
- Database has ~ 90 shots from ~ 500 RMP discharges taken (~ 18%)
- Spans yrs. 2003-2007
- Focused on density pumpout, Δn_e & τ_{eff} (defined later)

Real time history of database

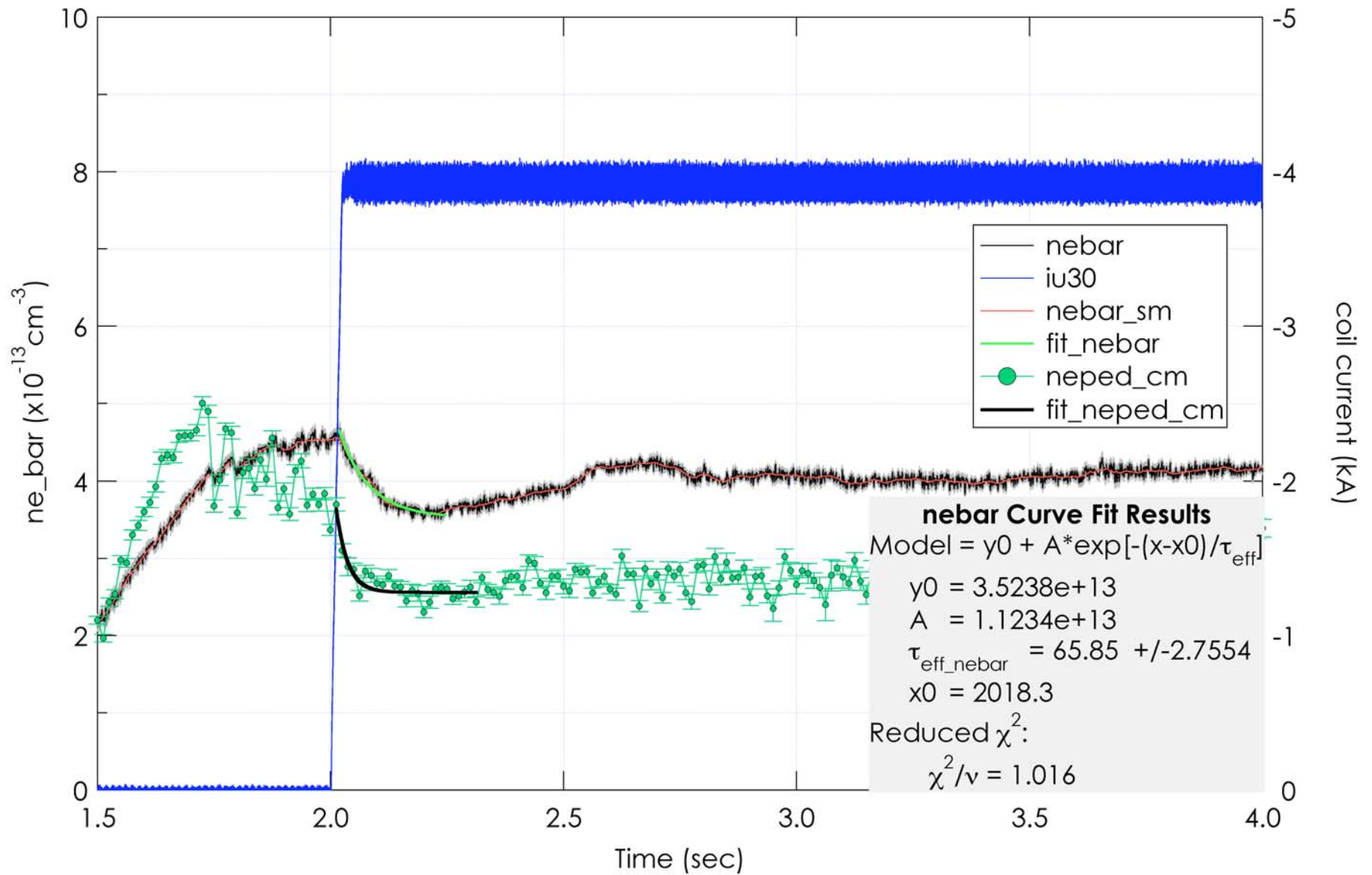


Technique defined

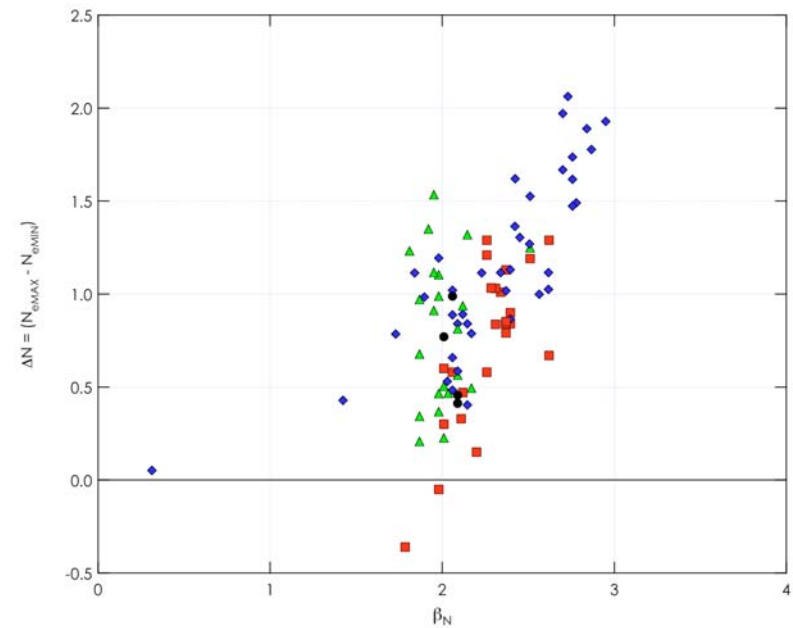
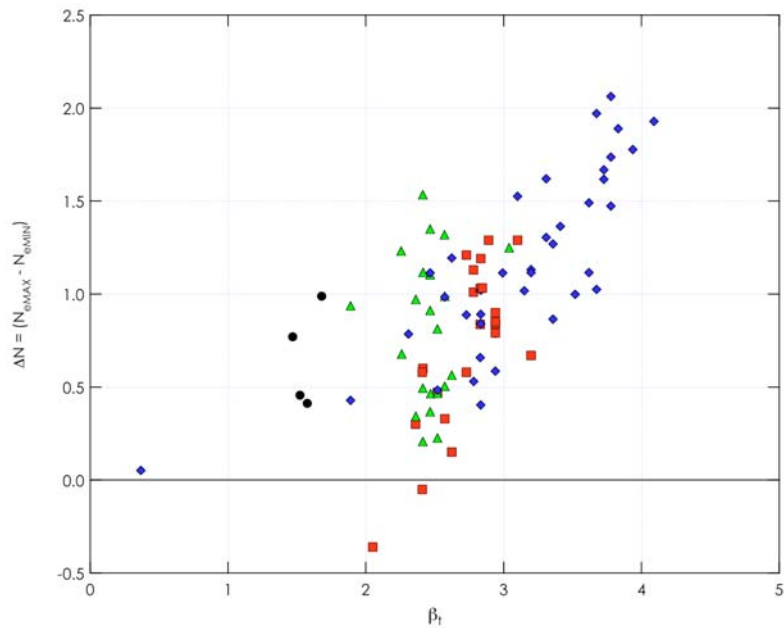
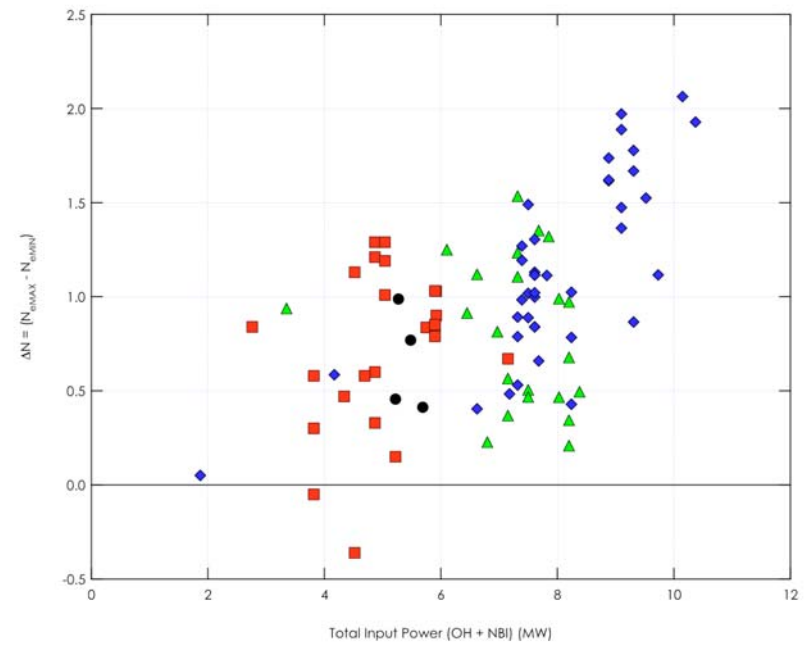
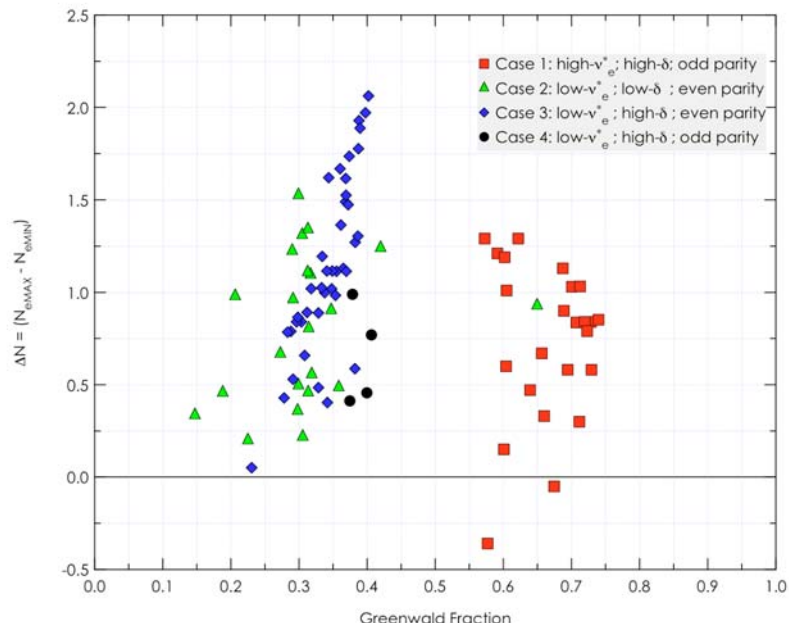
- Density pumpout; short time around I-coil turn-on
 - Model density drop as: $N_e(t) = N_{\max} \exp\left[-\frac{t}{\tau_{\text{eff}}}\right]$
 - N_{\max} = before coils on
 - τ_{eff} = characteristic pumpout time
 - N_{\min} = density at end of drop
- Use interferometer V2 chords & prmtan_neped
- Gives characteristic pumpout params.
 - Density pumpout magnitude:
$$\Delta N = (N_{\max} - N_{\min})$$
 - Pumpout time: τ_{eff}



Fit example

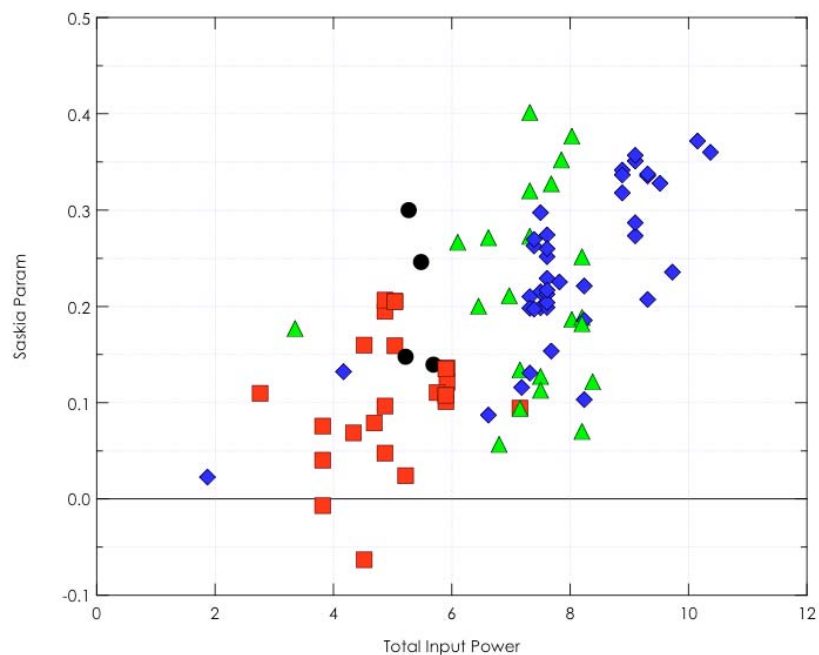
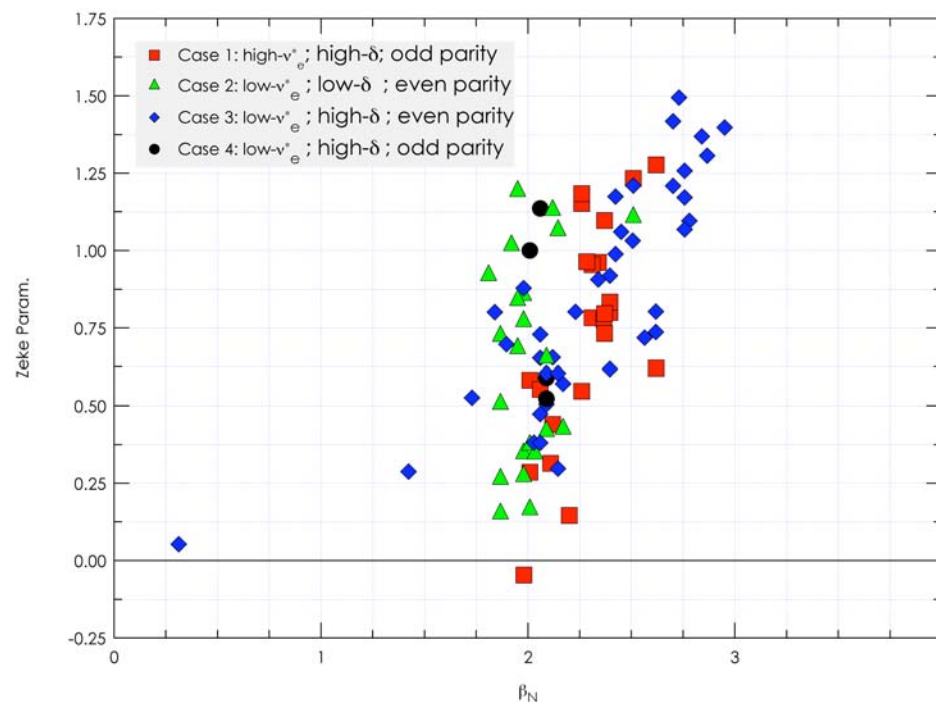
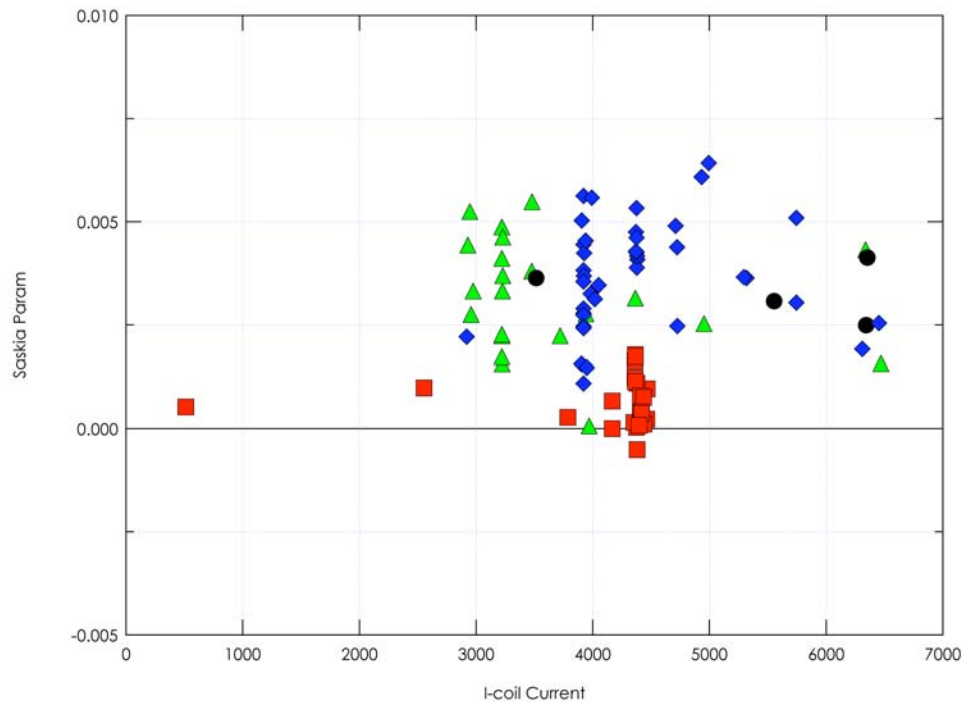


Pumpout versus electron density & case



Normalized Parameters vs. Various things

- Saskia Param = $(N_{\max} - N_{\min}) / N_{\max}$; Zeke Param = $(N_{\max} - N_{\min}) / N_{\text{GW}}$



Density change vs. pumpout

