# Step 1:

* Good match, no further testing
* Based on SA, can try making cmax range smaller
  + +/- 10-20 around optimal set
* Quick check shows cmax-gpp linear

## SA: (with initial guess)

* Cmax2 - obs 3 relationship most important
* Cmax1 - obs 2 second most important
* Eigenvector 1 - cmax2 and eigenvector 2 - cmax 1

# Step 2:

* *CR*: Decent match, just obs 3 is off (under estimate)
* *R\_weightinit* : Adjusting weight and initial guess off of first try doesn’t help (worse match in my test runs)
* *R\_postinit:* testing run with initial guess based off of optimal values from the best Step 4 run ( *CR\_P8\_init)*

## SA: (with initial guess from first run)

* Nmax 1 and 2 impacting o2 and o3, nmax 1 and 2 corr

# Step 3:

### Krb Only:

* *R1 and R2*: Decent match…
  + Obs 8 hardest to match
    - some runs are an overestimate, others close, others underestimate

### Nmax and Krb:

* *CR1 - CR6*:
  + CR1 looks bad, but may need to be plotted with smaller y axis to see variation.
    - Misses multiple of the larger values target obs
* Weightinit
  + Still not a good match

# Step 4:

### Cfall Only:

* *CR with krb* : Decent match…
  + Obs 8 is underestimated
* *R\_weight:* adjust weight only to focus on obs 8
  + Worse match, misses obs 8 completely
* *R\_init:* adjust initial guesses
  + Worse match, misses obs 8 completely

### Nmax, Krb, and Cfall:

* *CR\_P1, CR\_P8:*
  + Obs 8 and 9 hard to match, either over or underestimates 9
* *CR\_P8\_weight:* Adjust weight to focus on 12 and 13
  + Somewhat better, obs 10 and 12 are off
* *CR\_P8\_init, CR\_P8\_init2, CR\_P8\_init3:* adjusted initial guess based on previous runs to be closer to optimal sets
  + Much better match so far

# Step 5 (all combined):

* CR: using informed initial guess based on step 4 (and param file for nfall)
  + Good results, but lower error has higher nmax and krb values
    - Not sure which makes more sense
* CR\_init: 2nd try with initial guess informed from CR (CR\_P5, run 2) runs and param file, choosing run with lower nmax and krb
  + Does results in lower nmax and krb, but still tend to be on the higher end (see histograms)