Short Status Update: High Degree Mode Fitting MDI, GONG & HMI mode Fitting During Cycle 23

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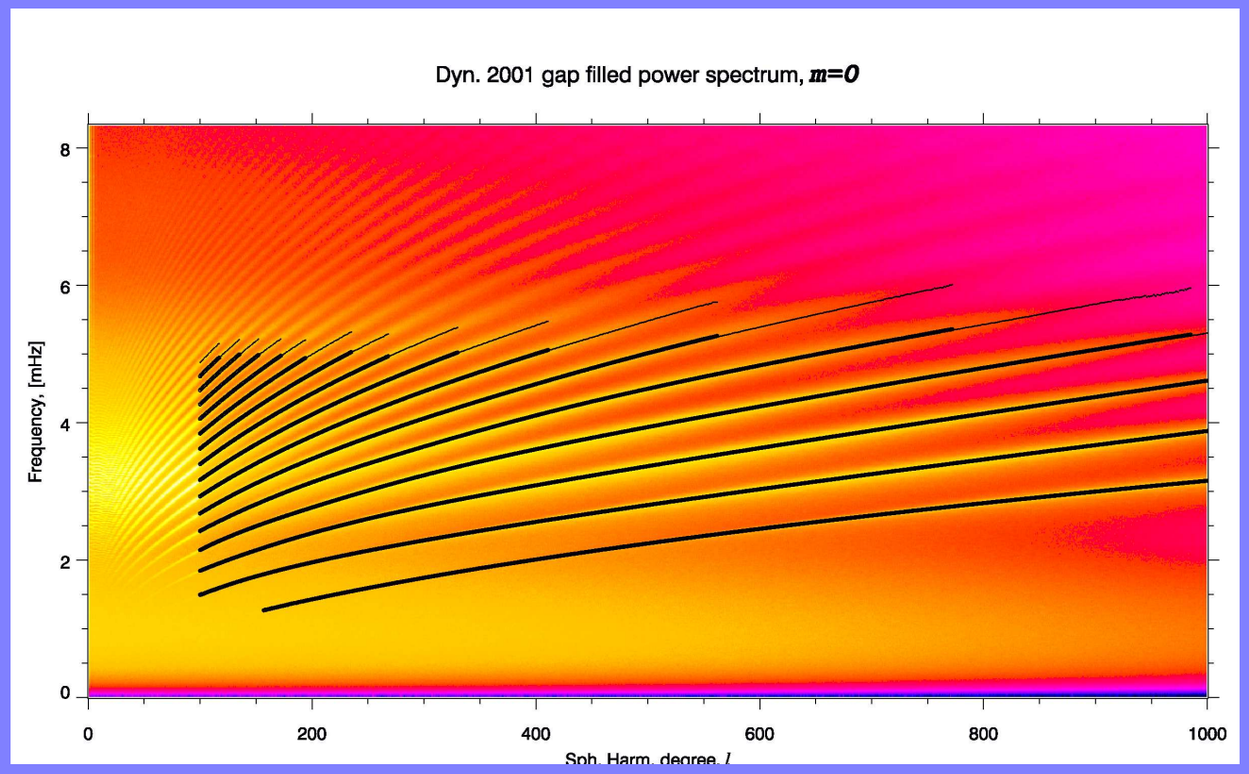
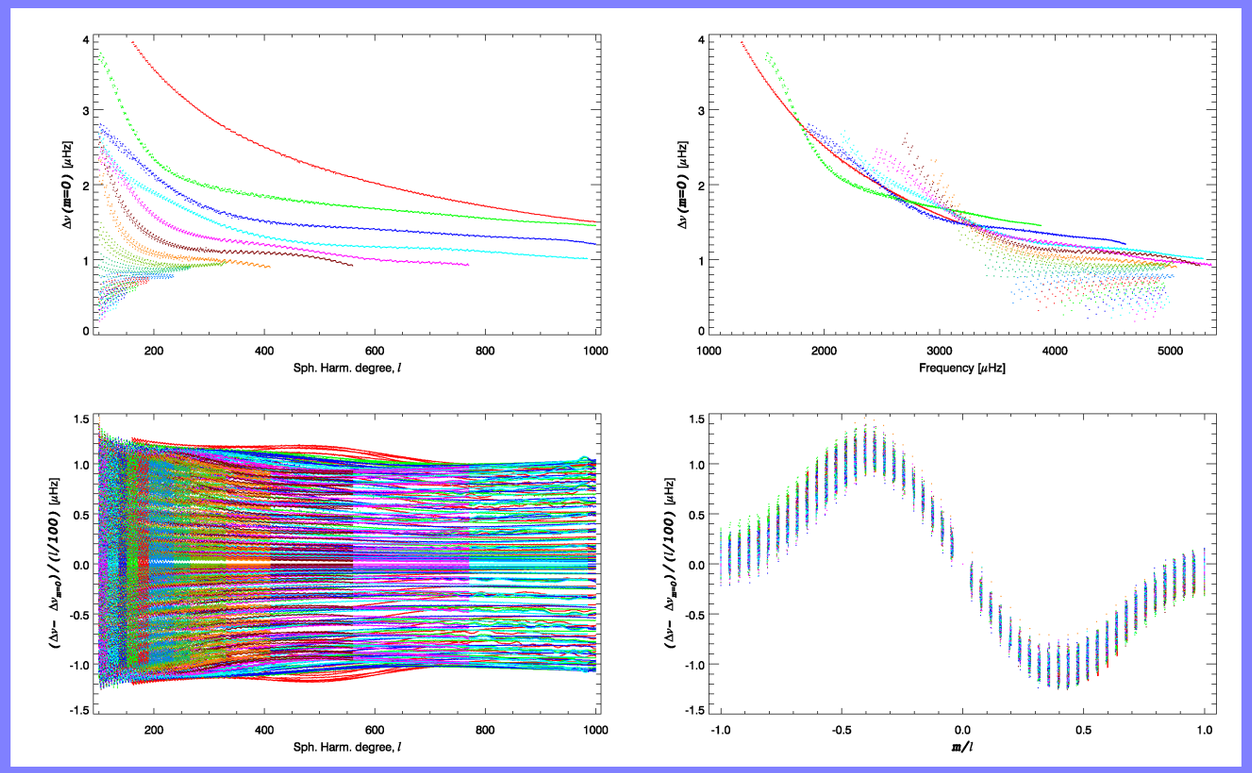
High Degree Mode Fitting — I



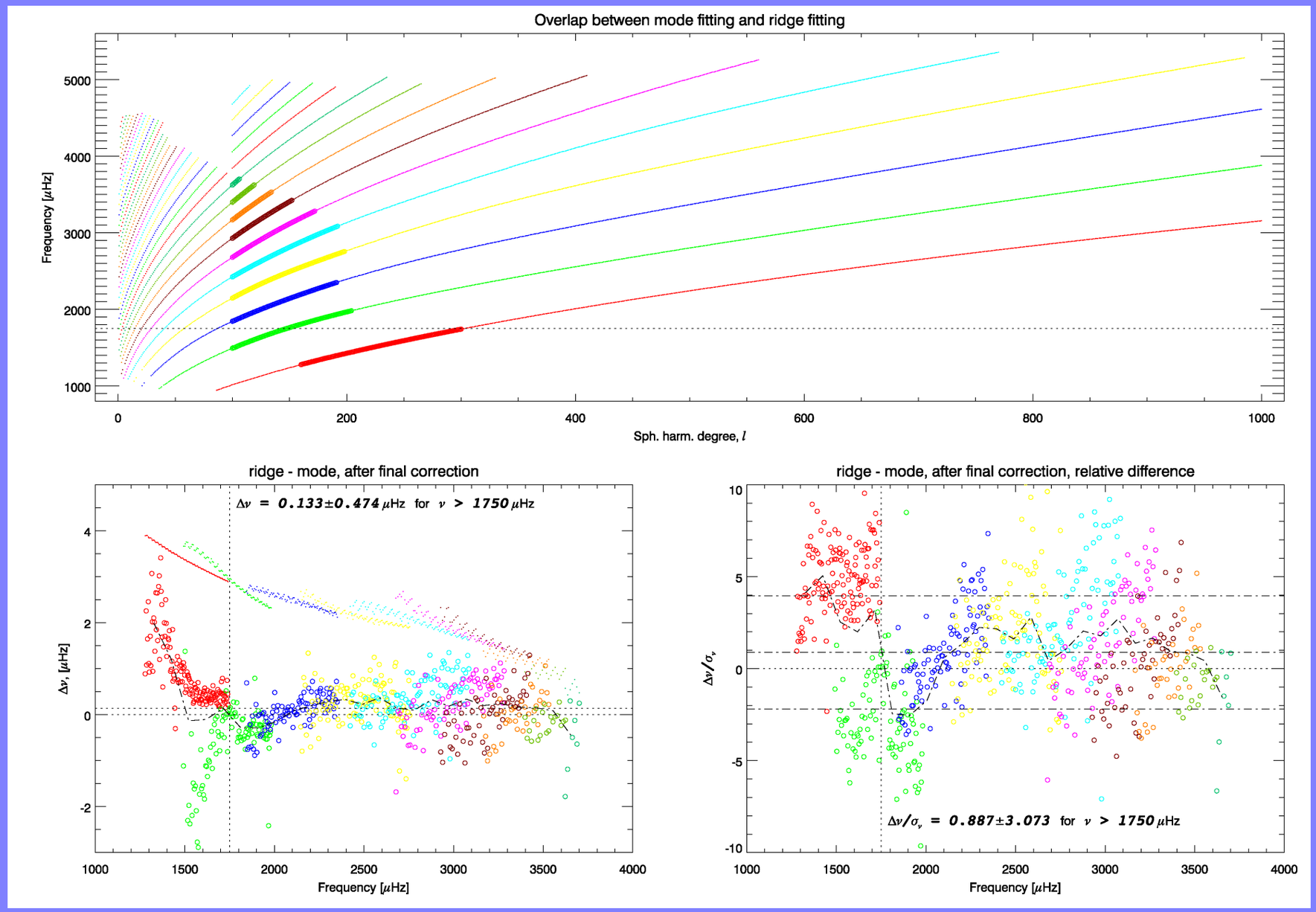
- Paper almost finished
- Fitted all (n, ℓ, m) ridges for $\ell \leq 1000$
- In excess of 6×10^6 mutiplets, or 5,795 singlets (n, ℓ)
- Use our ridge modelling to correct ridge to mode (ν, Γ, A, α)

High Degree Mode Fitting — II



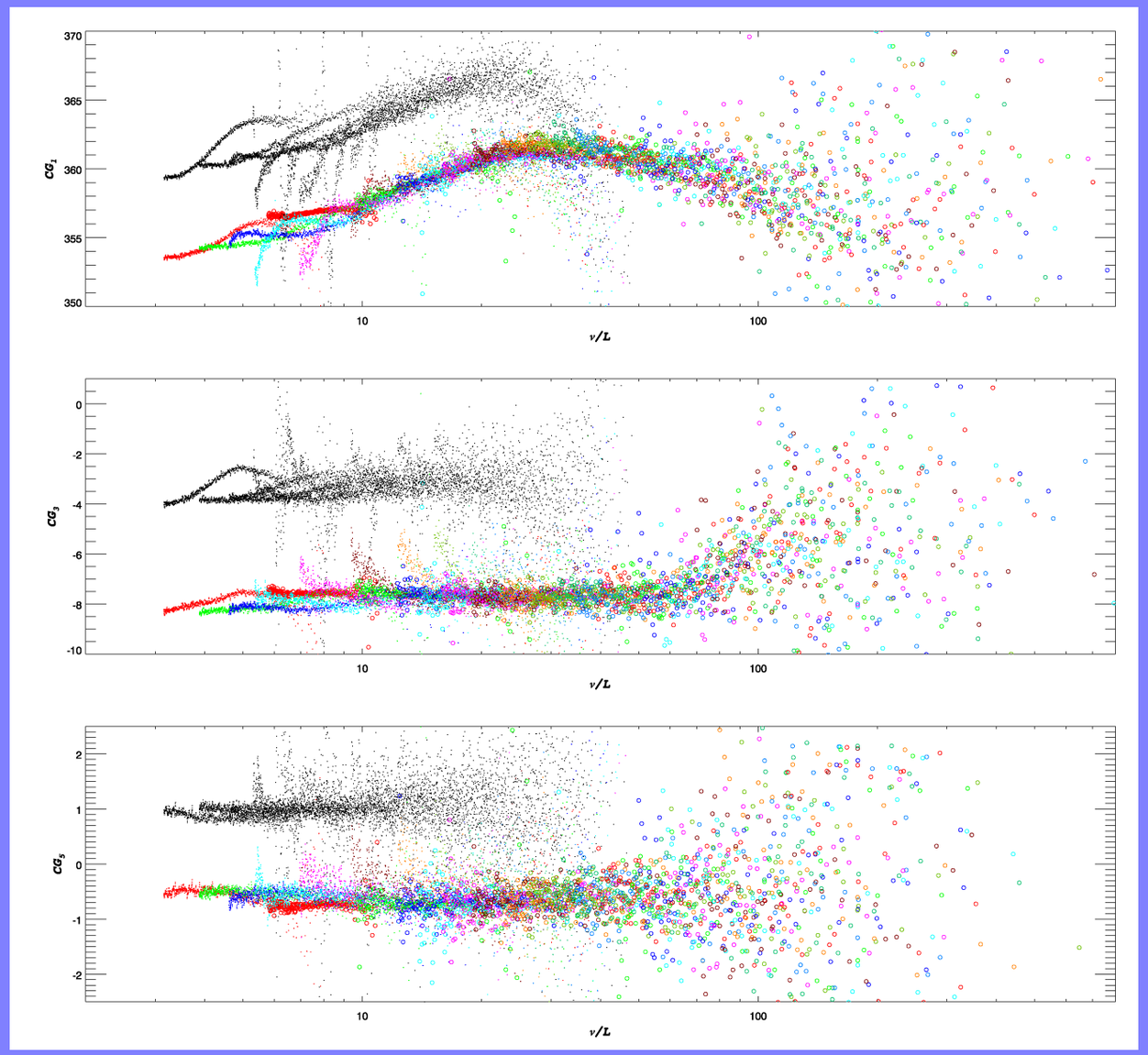
- Iterated on model input parameters, when possible, to best match observations.
- Perturbed model input parameters to derive precision of correction
- MDI poorly known PSF remains the problem
- Expect tables (ν, Γ, A, α) available w/in 3 months
- Next: *if/when funded*, use HMI to determing MDI's PSF and improve HiL results

High Degree Mode Fitting — IIIa



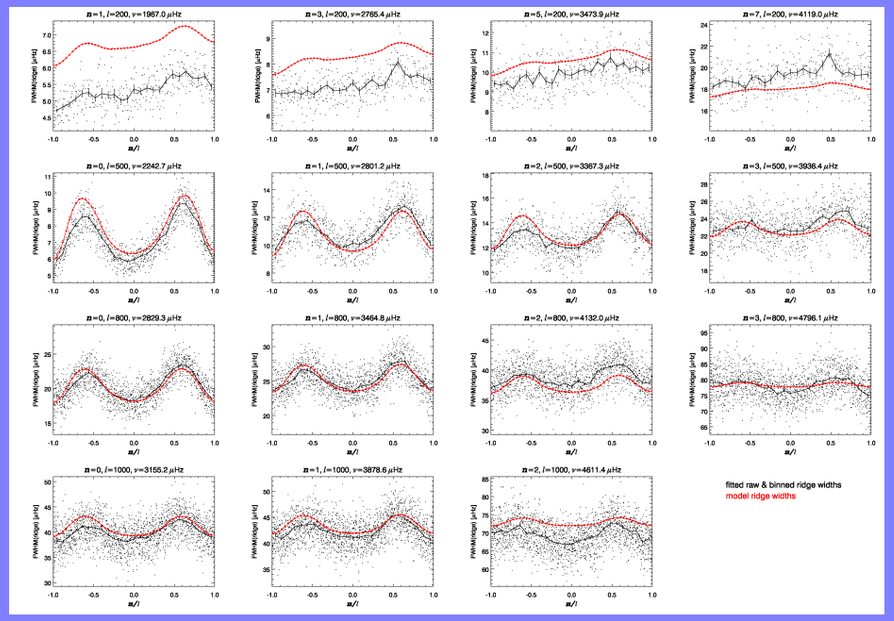
- singlets: comparison of frequencies estimated from ridges vs resolved

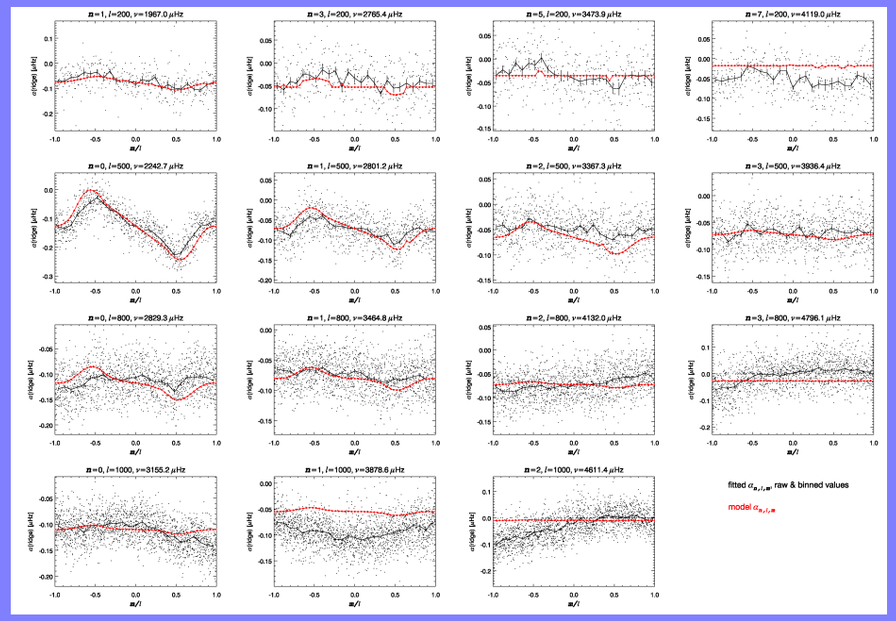
High Degree Mode Fitting — IIIb

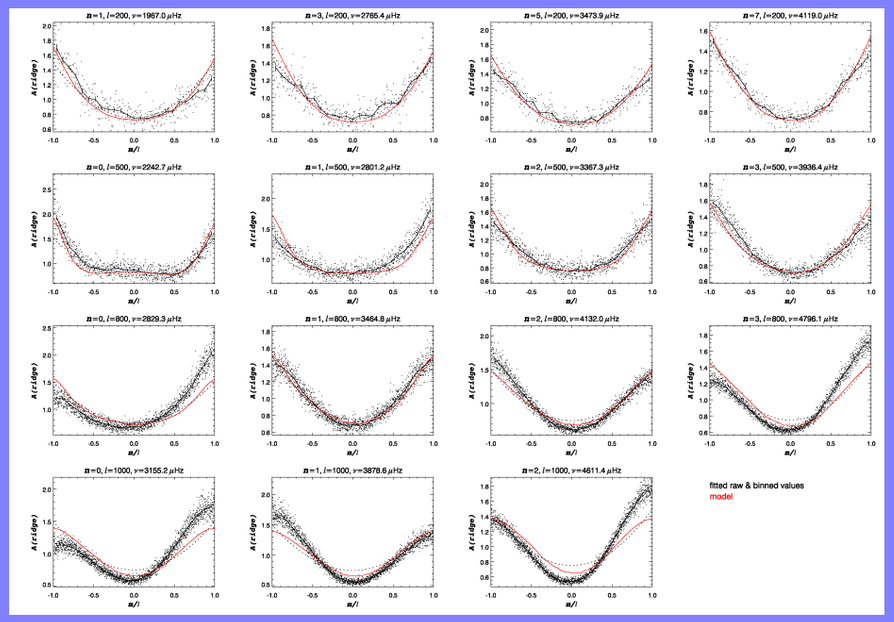


- rotational splittings: comparison of CG coefs estimated from ridges vs resolved (black: uncorrected ridges CGs)

High Degree Mode Fitting — IV





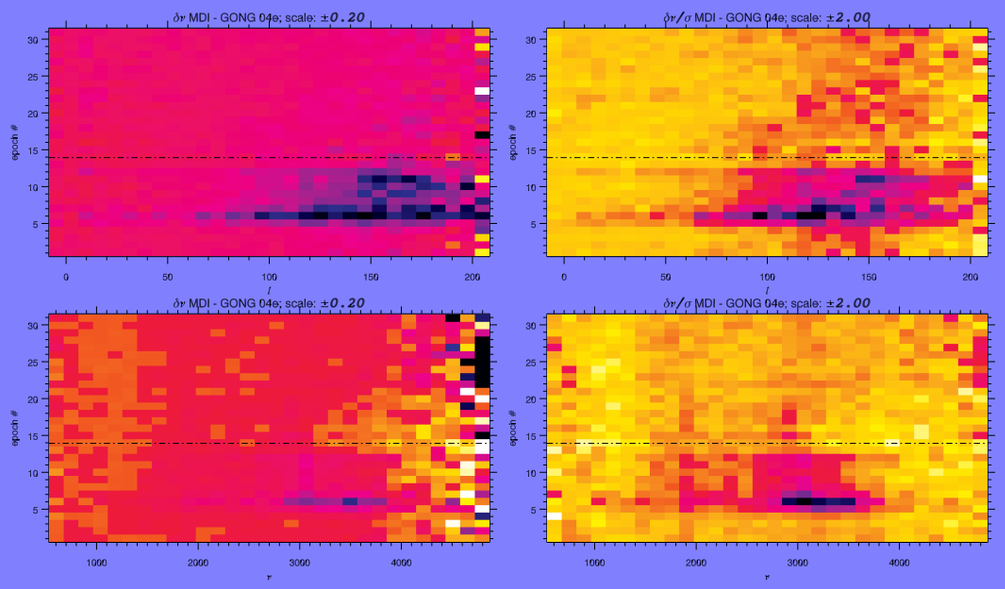


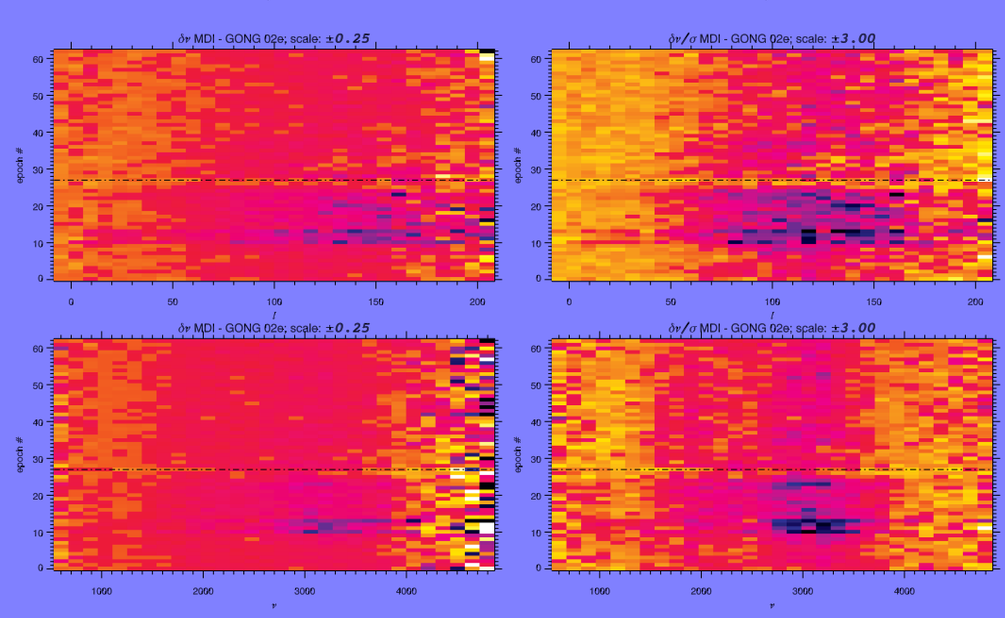
$$\begin{array}{c|c} \Gamma & \alpha \\ \hline A & \end{array}$$

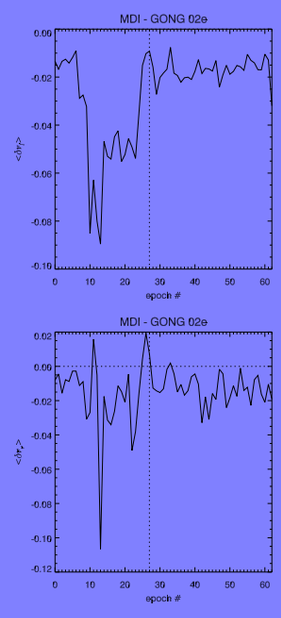
MDI, GONG & HMI mode Fitting

- Fitted 64×72 day epoch covering Cycle 23
- one 64×72d, three 32×72d, seven 16×72d, . . . , down to 64 1×72d epochs.
- Low attrition rate.
- MDI & GONG have been fitted, using JS leakage matrices
- Have my own leakage matrix calculation (will be compared to TPL's)
  work in progress
- Can compare both data set, fitted using *same* epochs and *same* fitting method (but different leakage matrix)
- Plenty of rotation rate inversions. . .
- Next: will soon start fitting HMI data (*funded*)

MDI vs GONG: 4e & 2e

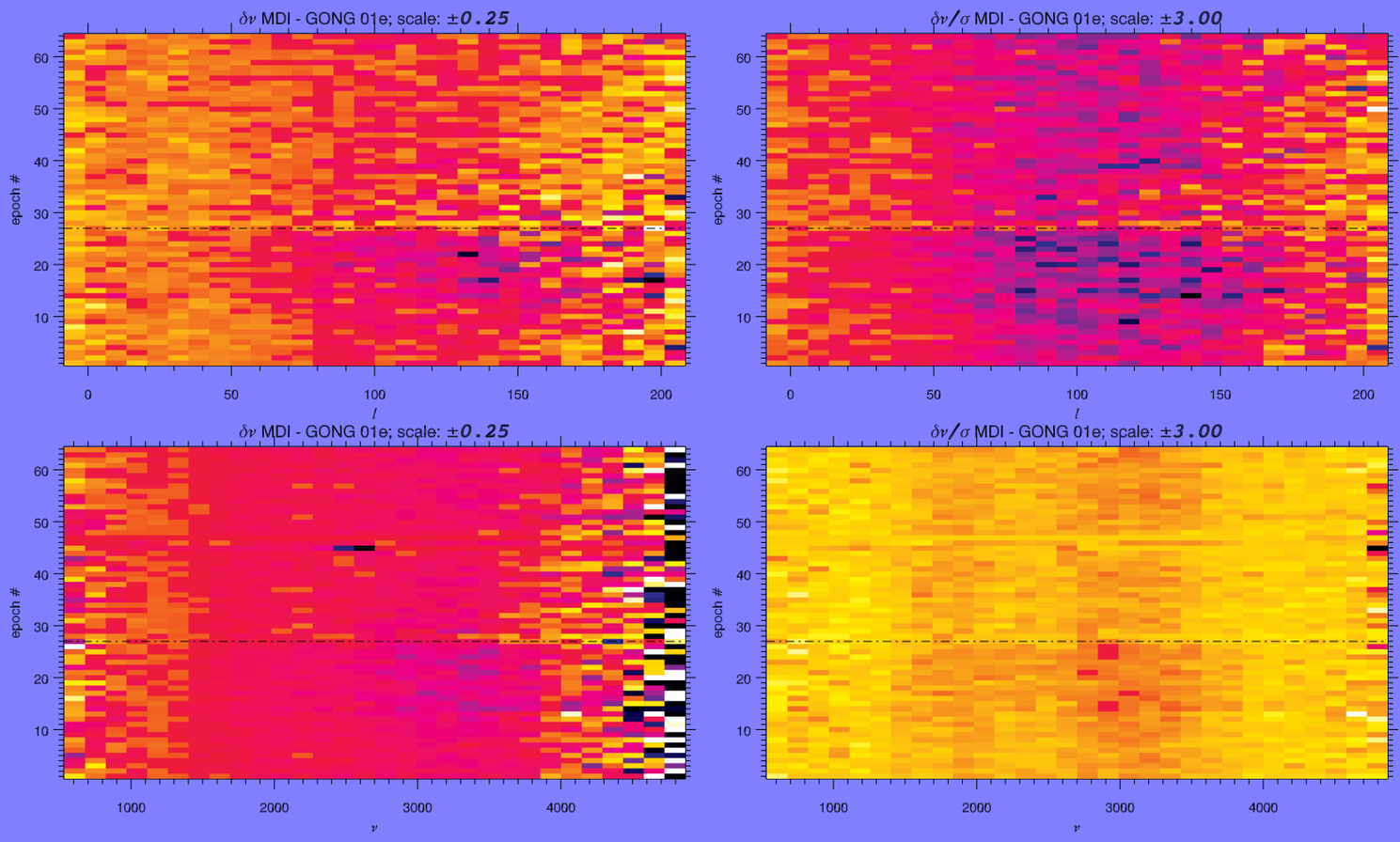






- dash line at GONG classic to GONG+ transition

MDI vs GONG 1e (1×72d)



- barely visible when using 72-day long time series

The End!