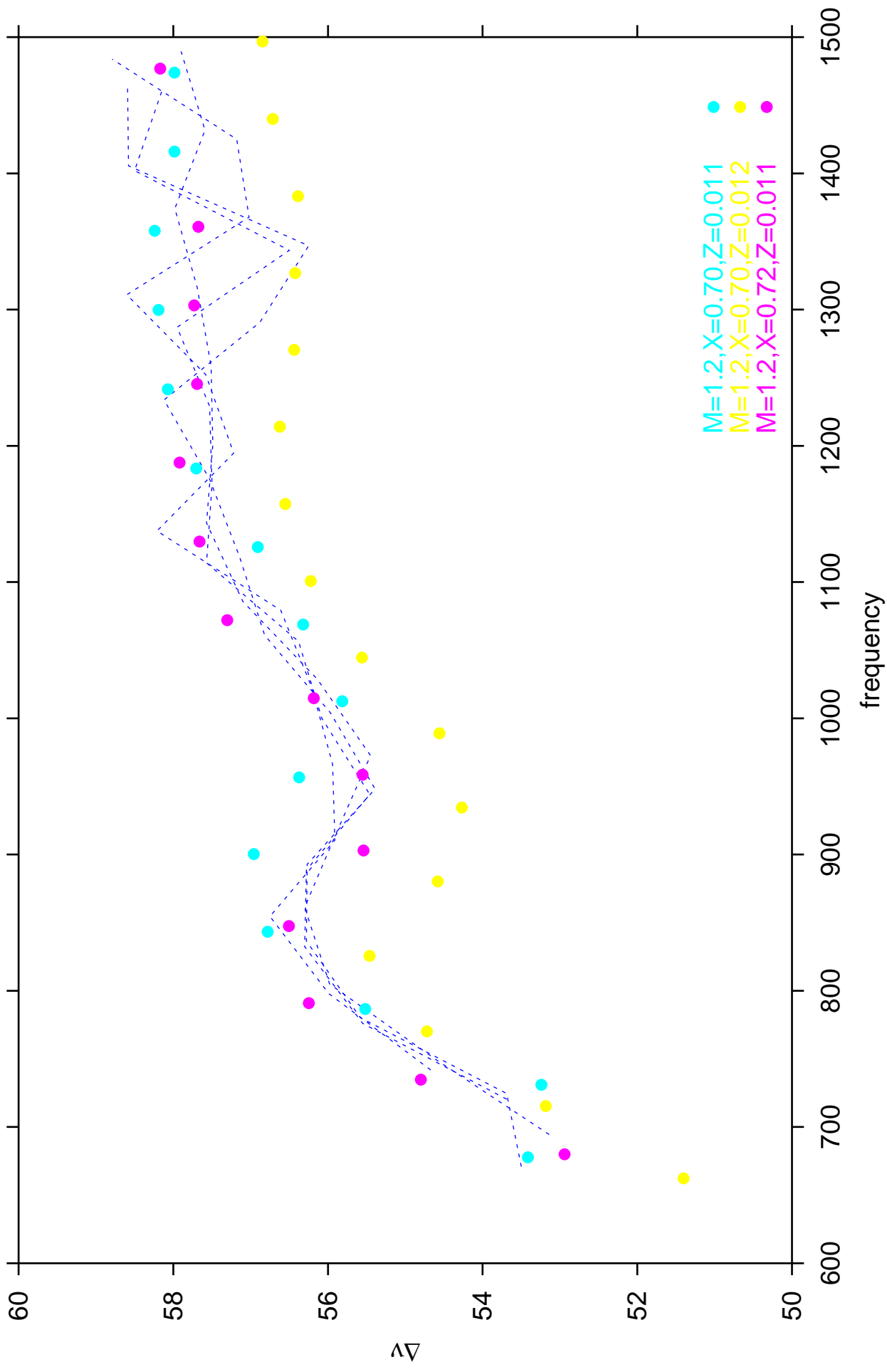
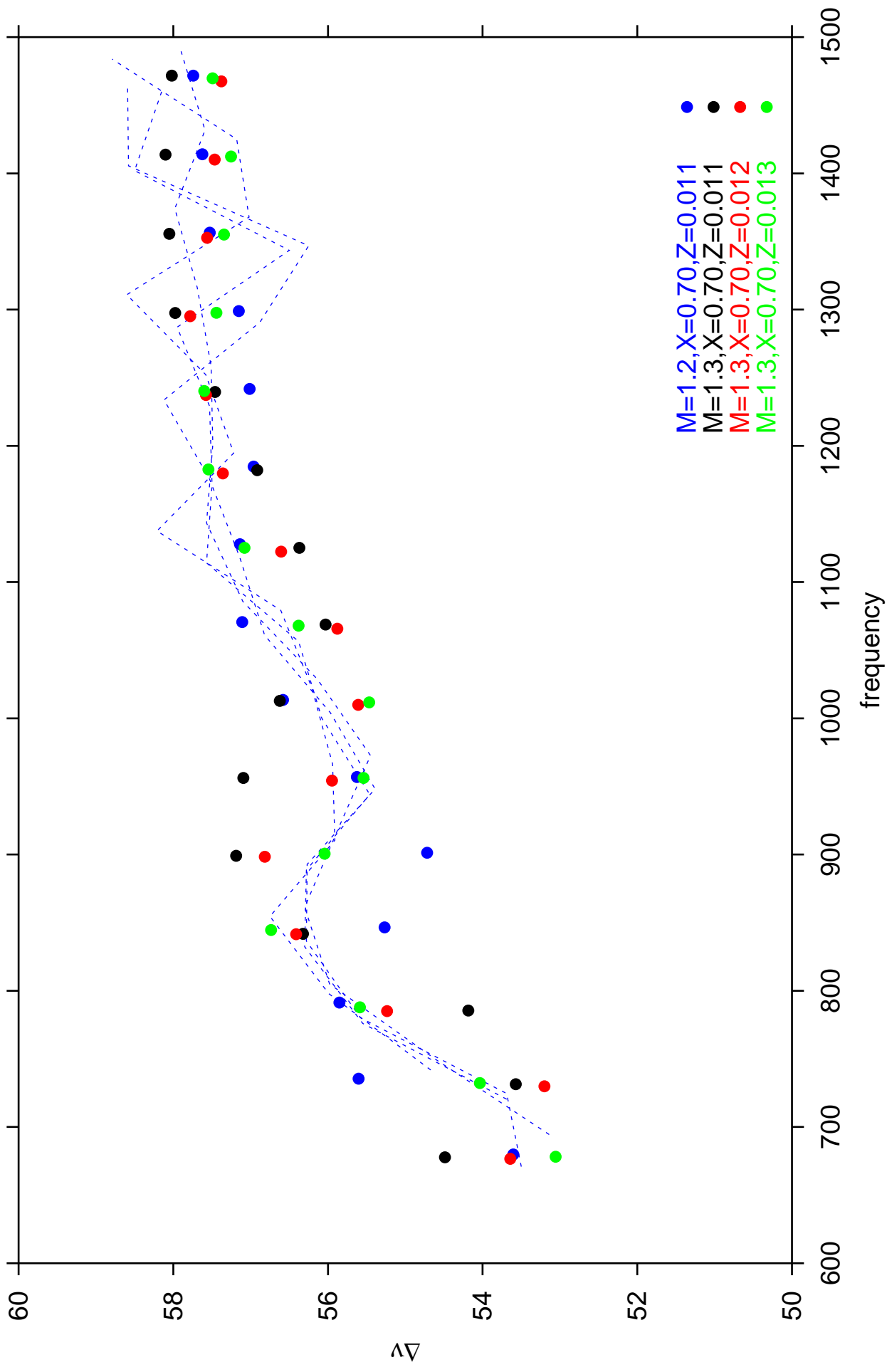
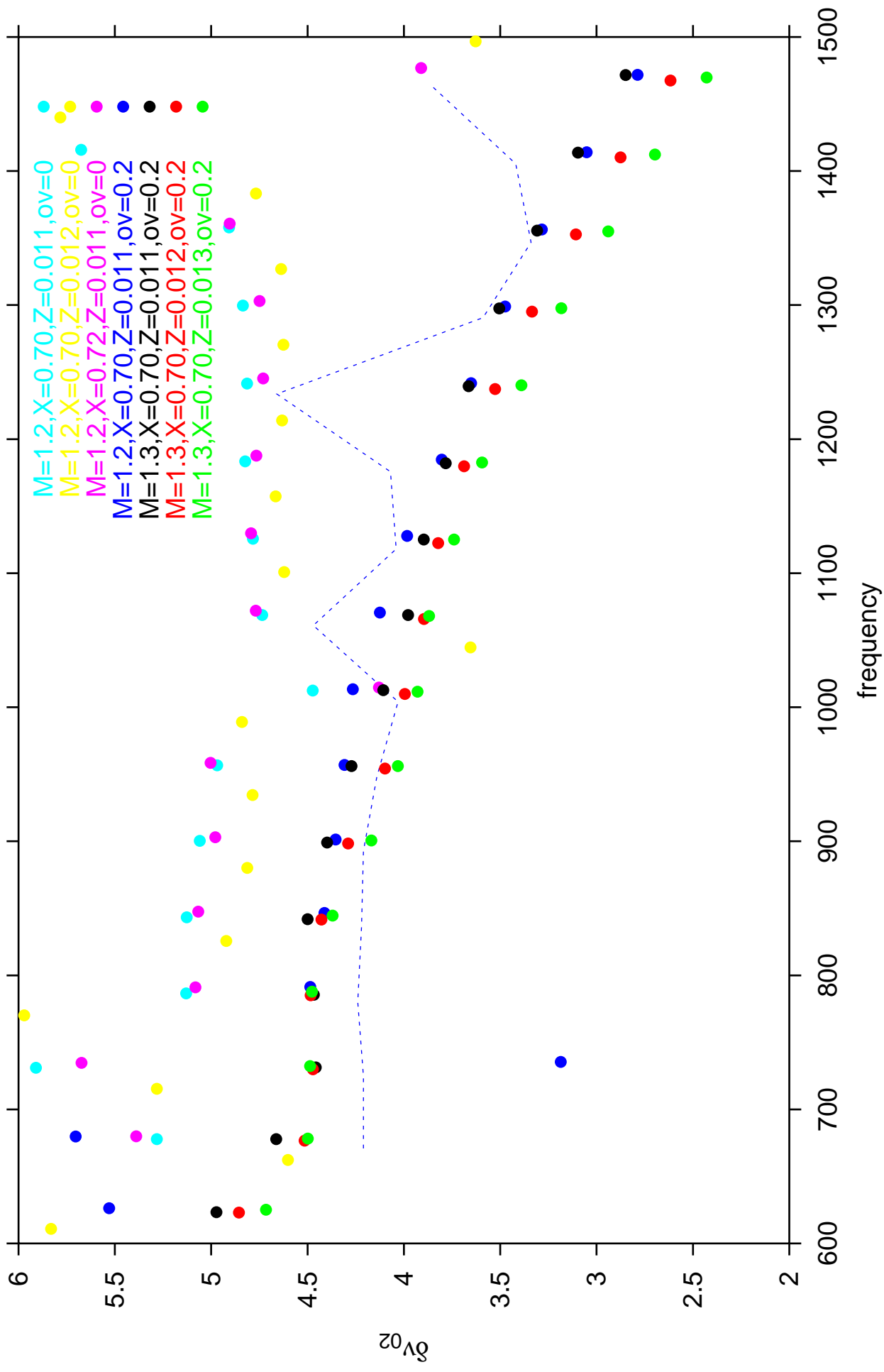


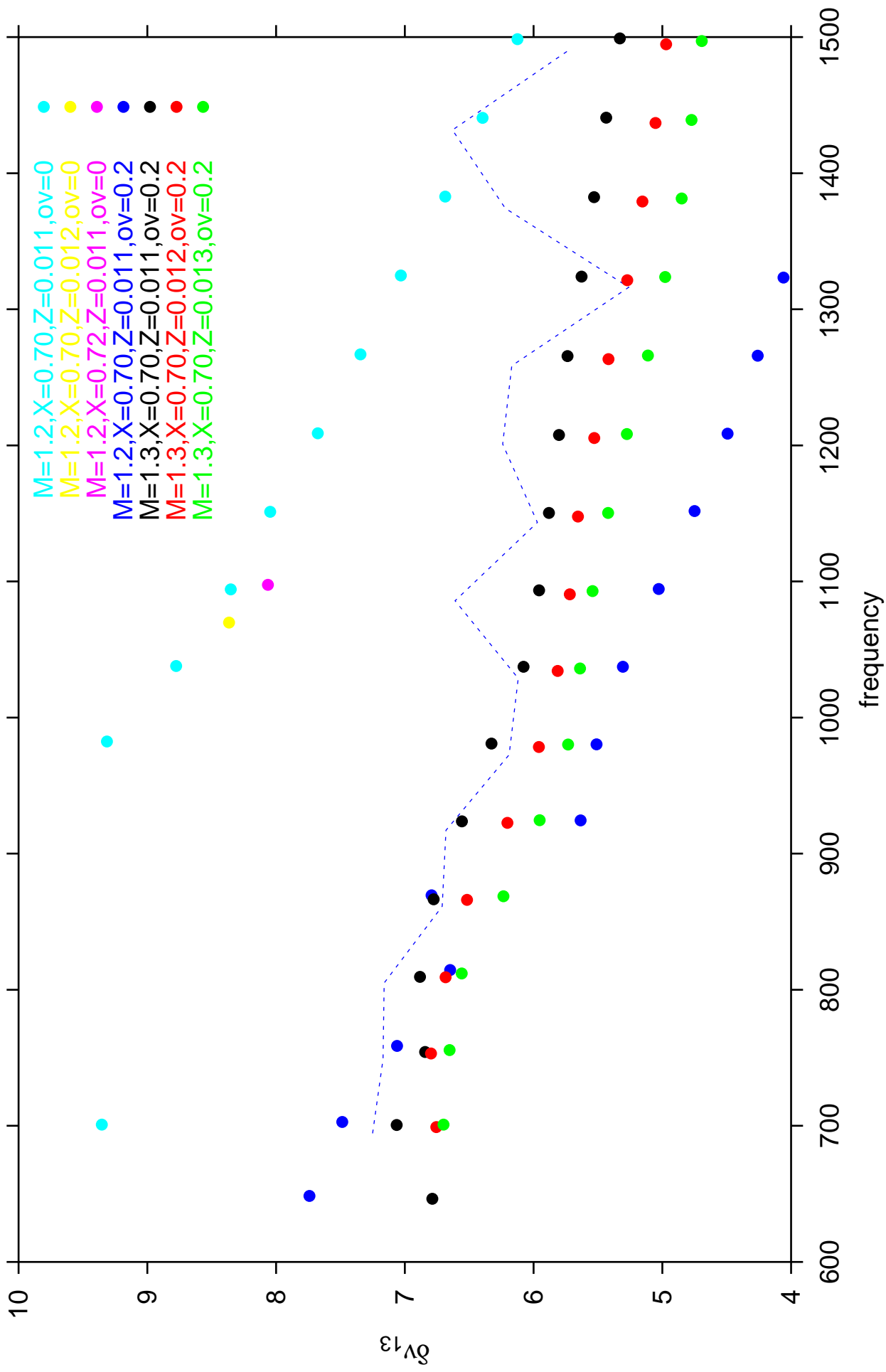
No overshooting

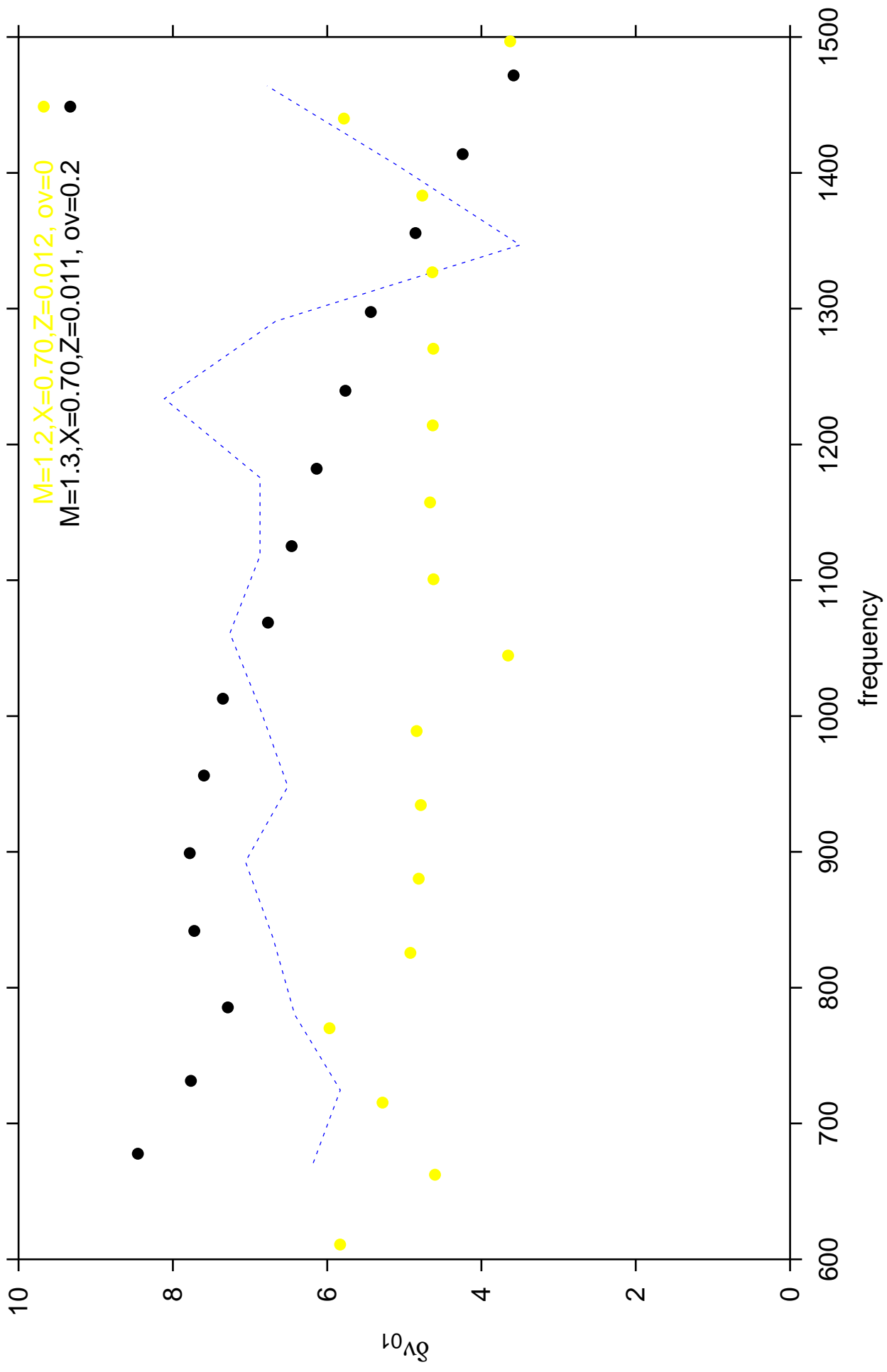


overshooting = 0.2









STAR #4: HD 43318

$$T_{eff} = 6280 \pm 100 \text{ K} \rightarrow \log T_{eff} = [3.791, 3.805]$$

$$M_{bol} = [2.75, 2.95] \rightarrow \log L/L_{\odot} = [0.72, 0.80]$$

$$\text{Convention: } M_{bol, \odot} = 4.75$$

$$[\text{Fe}/\text{H}] = -0.18 \pm 0.10 \rightarrow \text{Z}/\text{X} = [0.0129, 0.0204]$$

$$v \sin i = 6 \pm 4 \text{ km/s}$$

Frequency analysis $\rightarrow l=0,1,2,3$

Models calculated:

$$M \sim 1.2 \text{ to } 1.4 M_{\odot}$$

$$X = 0.70 \text{ to } 0.72$$

$$Z = 0.011 \text{ to } 0.013$$

$$\alpha_{ov} = 0 \text{ or } 0.2$$

No diffusion

CONCLUSION:

Cannot fit $\delta\nu_{02}$ and especially $\delta\nu_{13}$ without overshooting.

Best model so far:

$$M = 1.3 M_{\odot}$$

$$Z = 0.013$$

$$X = 0.70$$

$$\alpha_{ov} = 0.2$$