

Characteristics of input model HD43318

Structure and frequencies

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Global constraints on the input model

$$3.79 < \log(T_{eff}) < 3.80 \quad \Rightarrow \quad T_{eff} \sim 6280 \pm 100^0 K$$

$$2.75 < Mbol < 2.95$$

$$[Fe/H] = -0.18 \pm 0.1$$

With $Mbol_{\odot} = 4.75$ and $(Z/X)_{\odot} = 0.0245$

$$0.72 < \log(L/L_{\odot}) < 0.8$$

$$0.01656 < Z/X < 0.02038$$

Rotation

$$V \sin i = 6 \pm 4 km/s$$

If we take $i = 45^0$ and a mean radius 2.210^{11} then

$$\nu_{rot} \sim (1.825 \pm 0.3) \mu H Z$$

Input model of HD43318

Properties of the input model:

$$M/M_{\text{sol}} = 1.45$$

$$R/R_{\text{sol}} = 2.05$$

$$L/L_{\text{sol}} = 5.63$$

$$\log(L/L_{\text{sol}}) = 0.7505$$

$$\text{Age (My)} = 2275.6$$

$$T_{\text{eff}} = 6212.09$$

$$Z_s = 0.01493$$

$$X_s = 0.796$$

$$Y_s = 0.1886$$

$$Z_s/X_s = 0.01875$$

$$X_c = 0.109$$

$$T_c = 2.237510^7$$

$$x_{z\text{cext}} = 0.853$$

$$\tau_{z\text{cext}} = 3877.8 \text{ s}$$

$$x_{z\text{Gamma}} = 0.978$$

$$\tau_{z\text{Gamma}} = 1614.7 \text{ s}$$

$$x_{z\text{core}} = 0.0514$$

$$\alpha = 1.6$$

$$\text{overshoot } \zeta = 0.05$$

Comparison of HD43318 frequencies

Frequencies extracted by P. Boumier and J. Lochard from temporal series computed by T. Appourchaux:

P Modes (microHz) nu0 Err0 nu1 Err1 nu2 Err2 nu3 Err3

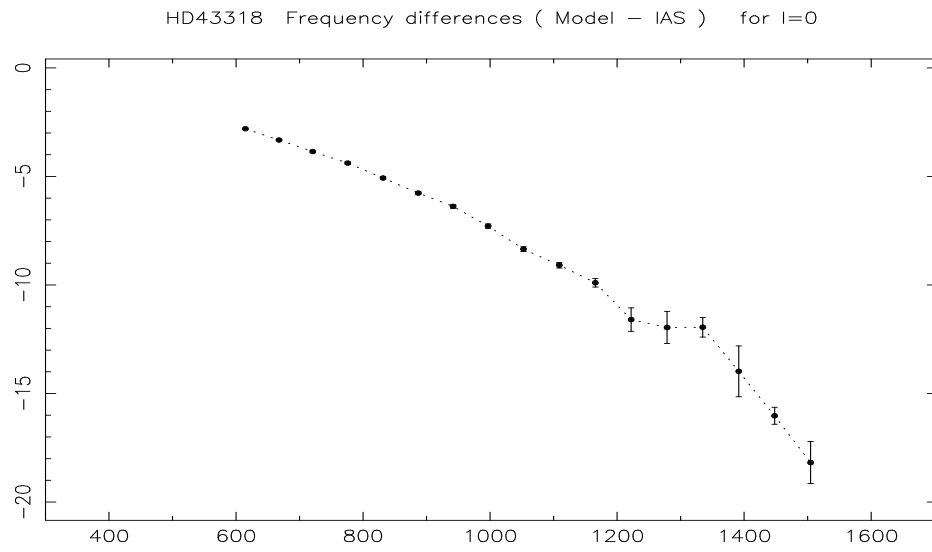
617.45	0.03	641.29	0.04	613.02	0.01	633.47	0.05
670.95	0.03	694.43	0.04	666.74	0.03	687.18	0.03
724.64	0.04	749.02	0.05	720.43	0.03	741.85	0.25
780.22	0.06	805.00	0.04	775.98	0.05	797.84	0.10
836.50	0.07	861.30	0.06	832.28	0.07	854.59	0.10
892.77	0.06	917.18	0.07	888.56	0.07	910.50	0.11
948.16	0.08	972.63	0.10	944.02	0.10	966.44	0.08
1004.13	0.10	1028.77	0.15	1000.10	0.10	1022.65	0.31
1060.95	0.11	1085.87	0.12	1056.48	0.12	1079.26	0.17
1118.09	0.13	1143.44	0.12	1114.05	0.15	1137.47	0.39
1175.62	0.20	1200.93	0.16	1171.55	0.16	1194.69	0.35
1233.74	0.54	1258.44	0.17	1229.08	0.30	1252.27	0.08
1290.62	0.74	1316.13	0.17	1287.03	0.45	1310.87	0.23
1346.87	0.45	1374.11	0.19	1343.53	0.32	1367.89	0.45
1405.45	1.17	1431.70	0.25	1402.03	1.22	1425.07	0.28
1464.04	0.39	1489.60	0.40	1460.18	0.72	1483.86	0.91
1522.87	0.97	1547.39	0.40	1518.76	0.82	1535.21	0.23

Low Frequency modes (microHz)

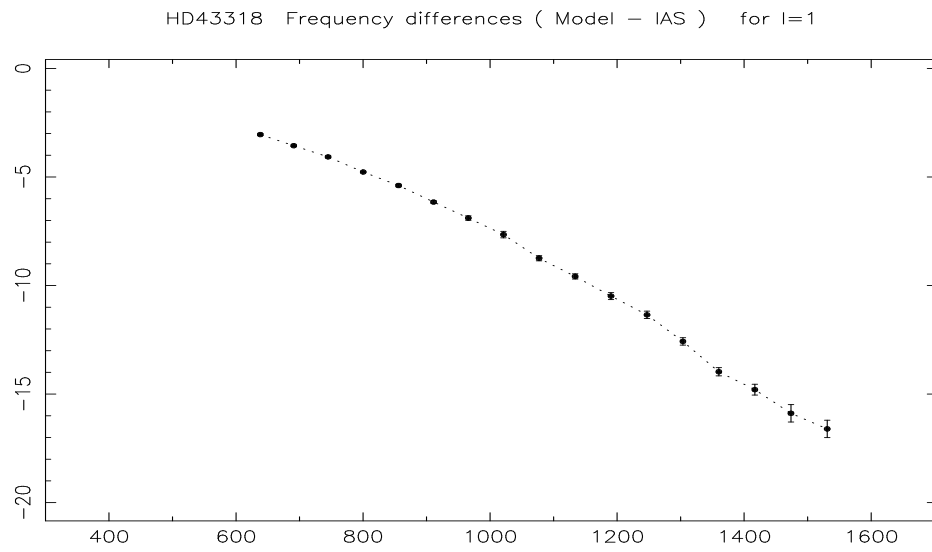
474.77 478.86 501.16 506.94 514.66 521.68 522.53 531.56
558.26 562.89 563.97 586.96
with same error 0.08

Comparison of HD43318 frequencies

Modes $l=0$

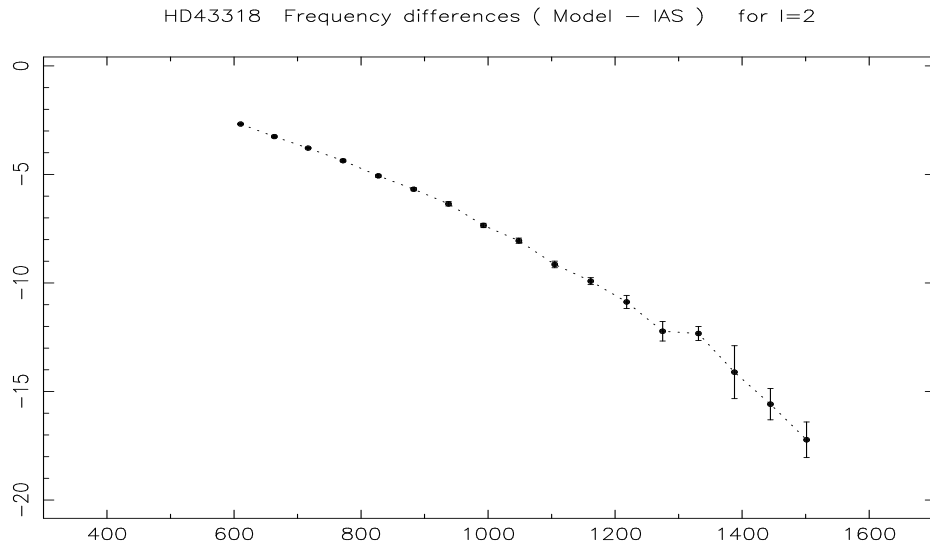


Modes $l=1$



Comparison of HD43318 frequencies

Modes $l=2$



Modes $l=3$

