

Boundaries of the δ Scuti Instability Region

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With new data on stellar opacity and equation of state, we computed the theoretical blue edges of the classical instability strip in the vicinity of the main sequence. The results were compared with observational data on δ Scuti variables using various diagrams (HR, $\log g - \log T_{\text{eff}}$, $M_V - (b - y)_0$ and so on). An example of these diagrams is shown in Fig. 1. Detailed results can be found in Pamyatnykh (2000).

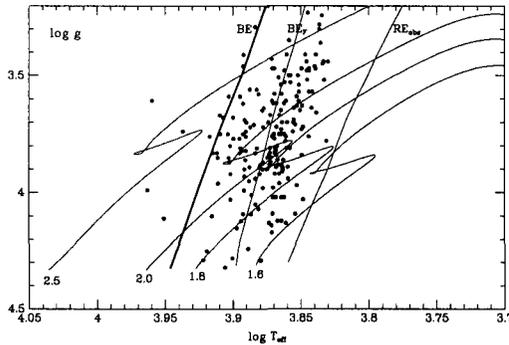


Figure 1. $\log g - \log T_{\text{eff}}$ diagram for δ Sct stars. The symbols BE, BE_F and RE_{obs} mark the theoretical blue edge for radial overtones, for the radial fundamental mode, and the empirical red edge, respectively. Evolutionary tracks of 1.6, 1.8, 2.0 and 2.5 M_{\odot} models ($X=0.70$, $Z=0.02$) computed with OPAL opacities (Iglesias & Rogers 1996) are shown. Observational data are due to Rodríguez et al. (1994).

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References

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