

MODE AND PERIOD CHANGES IN PULSATING STARS NEAR THE MAIN SEQUENCE: δ SCUTI STARS

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Reported mode changes in δ Scuti stars can usually be explained by insufficient data to obtain multiperiodic solutions and by the effect of time-variable amplitudes. The extensive data on 4 CVn obtained by the Delta Scuti network are used to illustrate that the large changes in the appearance of the power spectra in the years from 1966 to 1996 can be ascribed to amplitude variability.

The period changes of δ Scuti stars have been collected or redetermined from the available observations and are compared with values computed from evolutionary models. For the radial pulsators of Pop.I, the observations indicate $(1/P)dP/dt$ values around 10^{-7} year $^{-1}$ with equal distribution between period increases and decreases. The evolutionary models, on the other hand, predict that the vast majority should show increasing periods a factor of about 10 smaller than observed. Arguments are given why the rate of evolution for these relatively unevolved stars cannot yet be deduced from the observed period changes.