PULSATION OF α CIR (HD 128898)

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Abstract The group of pulsating CP2-stars (also called "rapidly oscillating Ap stars" provides asteroseismology with oscillation spectra of high accuracy. The potential as a diagnostic tool for modelling stellar interiors is widely appreciated. The identification of pulsation modes is important for such an analysis. However, this is rarely possible in an unambiguous manner. To improve the situation and to make use of additional information, we observed HD 128898 simultaneously spectroscopically and photometrically at ESO. For each of our individual CAT-CES spectra (1 minute integration time) it was thus possible to determine the pulsation phase at mid-exposure. A total of 887 spectra (R = 50000) were binned according to their pulsation phase and coadded to improve significantly the signal to noise ratio.

Although a full amplitude of about 6 millimagnitudes in Strömgren v was observed, we were unable to detect significant variations in radial velocity or spectral line profiles with the pulsation period of 6.3 minutes. An upper limit for variations in radial velocity can be estimated to be about 100 $m \cdot sec^{-1}$. This value gives an upper limit for the radial velocity to light amplitude ratio in B of about 20 $km \cdot sec^{-1} \cdot magnitude^{-1}$, which is considerably smaller than the value of 60 $km \cdot sec^{-1} \cdot magnitude^{-1}$ as is published for HR 1217 by Matthews et al. (1988, Ap.J., 324, 1099).

For the full paper consult Astronomy & Astrophysics, 1988.

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