HIGH LUMINOSITY F-K STARS MOTIONS AND Hα EMISSIONS

J. Smolinski, J.L. Climenhaga, and B.L. Harris
Department of Physics, University of Victoria
Victoria, B.C., Canada

Abstract

Changes and differences in radial velocities between neutral and ionized metals have been found for three F5-type supergiants: HD 231195, HD 10494, and HD 17971. Fifteen high dispersion coudé spectrograms (6 Å/mm) were used and 33 to 165 lines were measured on each. Semi-regular time variations up to about 8 km s^{-1} in radial velocity have been found. In addition, Hα line profiles for 8 high luminosity F-K stars have been analyzed. All of the stars show Hα emissions, variable in time, which is probably a common phenomenon in very luminous stars. Metallic emission lines with low excitation potentials, in particular the Ca I 6572.8 and the Fe I 6574.2 lines, are present in 5 of these stars.

TURBULENCE IN THE ATMOSPHERE OF B-TYPE STARS

Keiichi Kodaira
Department of Astronomy, University of Tokyo
Bunkyo-ku, Tokyo, Japan

Abstract

The stationary turbulent surface layer, whose depth is of the order of the pressure scale height in the subphotospheric layer, was investigated for B-type stars, using the momentum and the continuity equations with the inertia term neglected but the turbulence-viscosity term included. The mean velocity field is dominated by the horizontal component of the meridional circulation, driven by the pressure-density unbalance in the radiative envelope of the rotating star, and the differential rotation induced by the Coriolis force.

The model calculation for a B3IV-V star with the equatorial rotational velocity

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