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Program and Abstracts

Poster paper

INVESTIGATION OF ROTATIONAL VELOCITY OF E-PERSEI (EPSILON-PERSEI)

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We present the analysis of spectral line profiles of the Si III triplet at 455,3 nm, 456,8 nm and 457,4 nm of a variable star ϵ-Persei, and we investigate the vsin(i) value of the star using Fourier transform technique. Since the star is a strong non-radial pulsator the spectra averaged over several pulsational cycles have been used.

The derived average value using all lines is vsin(i)=134 km/s.

Poster paper

ELECTRIC DIPOLE TRANSITION PROBABILITIES IN Al IV AND Al V IONS

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Electric dipole transition probabilities in triply and four times ionized aluminium have been calculated in intermediate coupling.

The present calculations were carried out with the general purpose atomic-structure program SUPERSTRUCTURE (Eissner et al.1974), as modified by Nussbaumer and Story (1978). The wavefunctions are of the type $\psi = \sum_i \phi_i C_i$, where the basis functions ϕ_i are constructed using one-electron orbitals ψ. The latter are calculated with a scaled Thomas-Fermi statistical model potential (Eissner and Nussbaumer 1969) or obtained from the Coulomb potential (Nussbaumer and Storey 1978).

The relativestic corrections to the non-relativestic Hamiltonian are taken into account through the Breit-Pauli approximation.

We have also introduced a semi-empirical correction (TEC) for the calculation of the energy-levels

The adopted atomic model for Al IV includes 12 configurations corresponding to 103 fine structure levels. For Al V the model includes 25 configurations corresponding to 434 fine structure levels.