

E T 2 Vertical and horizontal abundance structures and magnetic field geometry of the roAp star HD 24712

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We have obtained high-resolution spectropolarimetric data of the rapidly oscillating Ap star HD 24712 (HR 1217, Do Eri) and the suspected roAp star 49 Cam using the SOFIN spectrograph attached to the Northern Optical Telescope.

This data is being analysed, modelling vertical elemental abundance structures and, in the case of HD 24712, applying a new Zeeman Doppler Imaging code (Piskunov et al., 2002; Kochukhov et al., 2002), which allows to reconstruct simultaneously and consistently the magnetic field geometry and abundance distribution of various chemical elements on a stellar surface. This combination of high quality observations and advanced analysis allows us to study the interaction and relation of pulsation, vertical (stratification) and horizontal (spots) abundance characteristics of especially iron-peak and rare-earth elements, and the stellar magnetic field. By this synopsis and the relation of our results to the analysis of high resolution and high time resolved observations (please also see Sachkov et al., this IAU Symposium) we aim to get new insights in the atmospheric structure and in the geometry, origin, and evolution of the magnetic fields of roAp stars.
