

**O. Kochukhov***Department of Astronomy, Vienna University, Türkenschanzstraße 17, A-1180 Vienna, Austria*

I will present a novel method, based on Doppler imaging inversion technique, which aims at constructing a 2-dimensional ‘image’ of pulsation velocity field using time series observations of stellar spectra. This method is applied to study the geometry of nonradial oscillations in the roAp star HR 3831. The image of pulsational perturbations at the surface of this star is the first stellar pulsation map derived without assuming spherical harmonic formalism. Our Doppler reconstruction directly demonstrates an alignment of the roAp pulsations with the stellar magnetic field axis. It also reveals a significant distortion of the dominant  $\ell = 1$  oscillation mode by the stellar magnetic field. This first detailed characterization of the magnetic and rotation effects on pulsations opens possibilities for direct testing of recent theories of magnetoacoustic oscillations in roAp stars.

---