

FUNDAMENTAL STELLAR AND PULSATION PARAMETERS OF THE Be STAR ζ Oph & P

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Abstract. Periodic line profile variations of ζ Oph have been followed in the He I $\lambda 6678\text{\AA}$ line at the Brazilian Laboratório Nacional de Astrofísica (Pico dos Dias) observatory with a 1.60m B&C telescope using the coudé spectrograph equipped with a CCD camera. The high resolution ($R = 60\,000$, high signal-to-noise ratio spectra (more than 200 in continuum) were obtained during two observing runs carried out over 7 nights in 1996 May 3 to May 5 and May 30 to June 2.

The purpose of this investigation was to examine the variations in both time and wavelength using the two-dimensional Fourier Doppler imaging technique (FDI) and multi-periodic search time series analysis. We discuss the results in the frame of the non-radial pulsator model for the star. The most important oscillation modes and frequencies are determined as well as some fundamental stellar parameters. We detected several new modes and frequencies in addition to others found previously.