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We present results of the analysis of spectroscopic time-series observations of the roAp star HD 24712 obtained at the phase of magnetic maximum. Observations were carried out on November 6, 2003 with the SOFIN high resolution échelle spectrograph at the 2.56m Nordic Optical Telescope, La Palma, Spain. 53 spectra with the resolution  $R = 80\,000$ ,  $S/N = 80$  and time resolution 105 s (50 s of exposure + 55 s overhead) in the 5000–6800 Å region were analysed for radial velocity (RV) pulsations. As in other roAp stars we find maximal RV amplitudes for the lines of rare-earth elements in the first and the second ionisation stages. RV amplitudes for strong lines of Mg, Si, Ca, Cr, Fe, Co, Y, Ba do not exceed the error of our measurements (15–30 m s<sup>-1</sup>). Pulsation period derived from the REE lines (Pr III, Nd II, Nd III, Eu II, Tb III) coincides with one of the photometric periods,  $P = 6.20$  min. Pulsation curves for the lines of the same REE ions are typically in phase, but phase shifts occur between the pulsation curves of the different REE ions/elements, providing a clear evidence for the running wave in the atmosphere of HD 24712. At the same time, an approximate constancy of the pulsation phase for a given ion independently of the line depth allow us to conclude that REE lines are formed in narrow layers in stellar atmosphere. Perhaps, only Pr III lines show a small increase of the pulsation phase with line depth caused by a larger thickness of the layer with enhanced Pr abundance.

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