

The well-known spectroscopic binary φ Per is a peculiar compact system, composed of a Be star with an O-type subdwarf companion. A set of nearly 400 spectra in the red and blue regions from Ondřejov and Potsdam Observatories as well as spectra published in the BeSS database were examined. From the radial velocities of H α , H β , and H γ emission lines and FUV observations from the IUE and HST, a new precise ephemeris was determined. The revised values of $M \sin^3(i)$ are 11.84 and 1.48 M_{\odot} (with uncertainties of 0.64 and 0.09 M_{\odot}), respectively, for the primary and secondary. In addition, the system shows cyclic variations (with a time scale of about 5 years) in the profiles of Balmer lines, manifested in their radial velocities, central intensities and V/R ratios. Understanding complex stellar systems requires combining multiple types of observations and creating models of sufficient complexity. In our case, a combination of interferometric visibilities from the CHARA/VEGA array, spectral energy distribution as well as individual spectral lines were used. Radiative-transfer computations were performed with the program PYSHELLSPEC, and physical parameters of the φ Per primary and the surrounding disc were derived. They correspond to an evolved system, in which most of mass was transferred from the secondary to the primary, where the former gainer is almost critically rotating, while the donor contracted to the helium main sequence (after the ignition of He in its core).