Recent observations of $\zeta$ Tau

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We report recent decrease of H$\alpha$ emission strength in bright Be shell star $\zeta$ Tau. The decrease of emission is caused presumably by depletion of the material in the circumstellar disc which resulted in disappearance of pronounced long term radial velocity and $V/R$ variations. The period analysis of the equivalent width data gives the period of 132 days for H$\alpha$ equivalent width and about 70 days for He I 6678 Å equivalent width.

During last three observing seasons the equivalent width of the Hα emission of Be shell star $\zeta$ Tau decreased significantly what lead to disappearance of pronounced long term radial velocity and $V/R$ variations. The decrease of emission was accompanied by mild brightness increase and bluing of $U$-$B$ and $B$-$V$ colours. This is consistent with the depletion of the circumstellar disc. If the depletion of the disc will continue, $\zeta$ Tau might lose its emission completely.

The period analysis of H$\alpha$ and He I 6678 lines gives 132 and 70 days respectively. These periods are possibly caused by eclipse of the emitting part of the disc by some material near the Lagrange point L4 (132 day period) and nodding as a consequence of tidally modulated precession of the disc tilt (70 day period).

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