# Multi-technique Study of the Dynamical Evolution of Be Star $\omega$ CMa

Mohammad Reza Ghoreyshi*[1], Alex Carciofi[1], and Daniel Faes[1]

[1]IAG – Brazil

**Abstract**

We model the light curve of the Be star $\omega$ CMa using the viscous decretion disk model. The date encompasses 33 years of observations, and contains 4 events of disk construction and dissipation. Our analysis allowed us to determine the viscosity parameter ($\alpha$) of the gas, as well as the rate of mass and angular loss for each event. We find that $\alpha$ is variable, ranging from 0.1 to 1.0, and that build-up phases have larger values of $\alpha$ than the dissipation phases. Additionally, we find that, contrary to what is generally assumed, during dissipation the disk feeding rate is not necessarily zero, meaning that $\omega$ CMa does not experience a true quiescence, but rather switches between a high mass loss rate phase (during which the disk is built) and a low mass loss rate phase (during which the disk partially dissipates). In this contribution, we extend the modeling to other observables such as polarimetry and line profiles. The importance of looking at these observables, in addition to photometry, is that each one probes a different physical process and different disk regions.

*Speaker