

Circumstellar disks around Classical Be stars

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Classical Be stars are defined as B-type stars whose spectrum has, or had at sometime, Balmer emission features. The emission lines are produced not by the central B star, but originate from a geometrically thin, circumstellar disk rotating with near-Keplerian velocity surrounding the central star. This disk is said to be formed by the material ejected from the star and the actual mechanism for this ejection is still unknown. The properties of the disk are studied spectroscopically to understand the kinematics as well as the content of the circumstellar disk. The circumstellar material is distributed in a large range of radius around the central star and thus has a radial gradient of temperature as well as electron density. Variation of spectral lines points to the appearance and disappearance of material in the disk, as well as its distribution. The study of spectroscopic variability in CBe stars is a powerful tool to understand the formation, evolution as well as dissipation of their circumstellar disk. We present the preliminary results of our spectroscopic study of a sample of about 30 Be stars in our Galaxy. The program stars were observed multiple number of times during the year 2009 to 2016 and spectra of 1Å resolution were obtained using the Universal Astronomical Grating Spectrograph (UAGS) at the Cassegrain focus of the 1 m reflector of Vainu Bappu Observatory, Kavalur, India. We present the results obtained from the study of the H α emission line originated from the circumstellar disk of CBe stars. We analyze the V/R variations and also estimate the radius of the disk using the peak separations for targets showing double peak in H α .