

PRE MAIN SEQUENCE CHROMOSPHERIC ACTIVITY

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ABSTRACT. We study the chromospheric evolution of low mass Pre Main Sequence Stars using the CaII line at 8542 \AA as a probe of stellar activity. Our sample consists mostly of classical T Tauri Stars (CTTS - $WH\alpha > 10 \text{ m\AA}$) and a few weak TTS (WTTS - $WH\alpha < 10 \text{ m\AA}$) with simultaneous observations from 4500 \AA up to 9000 \AA . After the proper corrections for veiling, we measure the chromospheric flux of the Ca II emission core and compare it with $H\alpha$ fluxes, veiling and the stellar age. Our main conclusions are the following:

1 - There is no trend between $\lambda 8542$ and $H\alpha$ fluxes for the whole set of stars, however a clear correlation is found for WTTS. This last finding is expected if both CaII and $H\alpha$ are mainly formed in the atmospheric environment which might be the case for WTTS.

2 - Chromospheric flux does not correlate with stellar age for CTTS.

3 - We present a correlation between the accretion rate of the circumstellar disk (veiling) and chromospheric fluxes (see below). Accretion through magnetic loops crossing the circumstellar disk may provide additional emitting area to the CaII fluxes. This last finding demonstrates the strong linking between the disk and the stellar magnetic surface fluxes.

