

# Poster: The formation and evolution of Herbig Ae/Be stars

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The formation mechanisms of low mass stars and high mass stars show large differences as well as similarities. In the intermediate mass range we can expect the formation scenario to switch from magnetically controlled accretion, at low masses, to the massive star forming mechanism - whichever that may be. The intermediate mass pre-Main Sequence Herbig Ae/Be stars are the ideal object class to study this problem. Here we present the results of two of our recently completed surveys and give an update on one on-going large study. These are an X-Shooter spectroscopic survey, a linear spectropolarimetric survey, as well as a study all these objects placed in the HR diagram using parallaxes provided by GAIA. The X-Shooter survey of 90 Herbig Ae/Be objects, is the largest such spectroscopic study to date. The data, covering the blue to NIR, are used to derive fundamental properties of the stars and their accretion rates in a homogeneous manner. We will provide evidence that the highest mass Herbig stars can not be accreting in the same way as lower mass stars (and can therefore act as an optically visible proxy for Massive Star formation). The linear spectropolarimetry across H of 56 objects provides information on the geometry of the stars' circumstellar disks at scales of order a few stellar radii. We show that the Herbig Be objects are surrounded by (accretion) disks reaching onto the stars, whereas the Herbig Ae stars are very similar to the T Tauri stars, which can be explained by magnetospheric accretion. Finally, we place more than 120 objects in the HR diagram, an increase of a factor of ten to previous such studies and zoom in on the differences in infrared excess, variability and evolutionary status of these objects on their way to the Main Sequence. If time permits, we will then give an overview of our optical interferometric studies of hydrogen line emission of these objects. (various sessions possible, but hard to choose: new facilities (gaia), outflows and disks (especially survey no. 2, but also no. 3), massive star formation across the galaxy (general topic)

*Outflows and Disks*