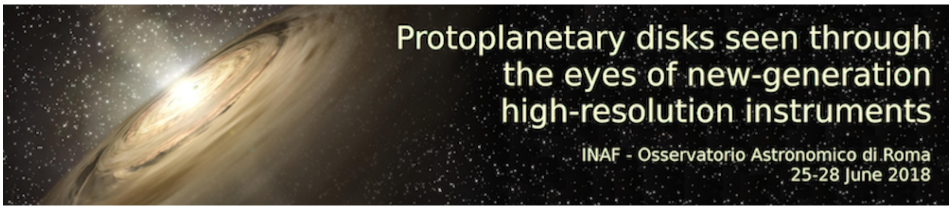
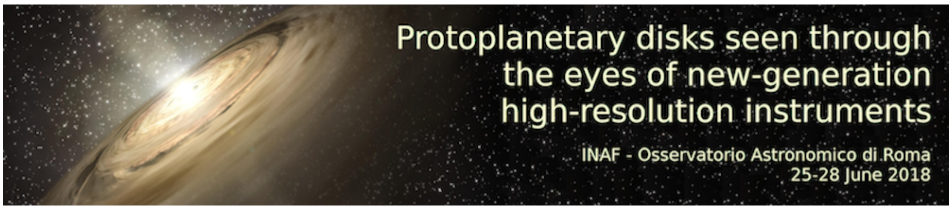


Contribution ID : **23** Type : **Poster**

An unbiased SPHERE-IFS Survey of Nearby Herbig Ae/Be Stars: Are All Group I Disks Transitional?"

One of the main goals of current planet-formation studies is to find planets still embedded in a proto-planetary disk in order to catch the planet formation process as it happens. Moreover, the process of clearing of disks surrounding pre-main sequence stars is still not deeply understood. In particularly, the main focus of our study is to test the model prediction (Maaskant et al. 2013, 2014) on the larger spatial extent of scattered light in Group I disks, which should be not visible for Group II. We have developed a novel algorithm for removal of speckles from the IFS-SPHERE data, based on the wavelength-dependence position of speckles and the independence from it of real features (disks asymmetries and companions). We used information also on the (known) spectral shape of the speckles in addition to the positional variation with the wavelength (e.g. all pixels with a spectral slope significantly different from the spectral slope seen in speckles must have some contribution which is due to real emission). These informations were used in two different ways to probe both the disk structure (with the comparison with RADMC3D models) and in detecting point sources. This powerful tool allowed us to detect so far four new companion candidates and six disk structures out of 24 sources in our sample of Herbig Ae/Be stars.

Primary author(s) : Ms UBEIRA GABELLINI, Maria Giulia (INAF)

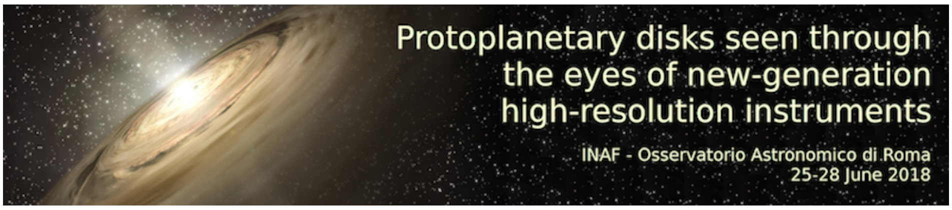


Contribution ID : **24** Type : **Poster**

Empirical diagnostics of protoplanetary disc winds

Disc winds play an important role in the evolution of protoplanetary systems, with photoevaporative winds in particular thought to be responsible for gas disc dispersal at late times. We present a new study of the observable diagnostics of these disc winds. We use both semi-analytic and numerical hydrodynamic models of disc winds, and compute observables such as free-free and forbidden line emission. We focus in particular on spatially-resolved observations (radio interferometry and optical/IR spectro-astrometry), and show how these techniques may allow us to measure disc mass-loss rates empirically. When combined with new observations (particularly from the VLT), these new diagnostics will allow us to build up a complete picture of how disc winds shape the evolution of planet-forming discs.

Primary author(s) : BALLABIO, Giulia (Univeristy of Leicester); Dr ALEXANDER, Richard (University of Leicester)

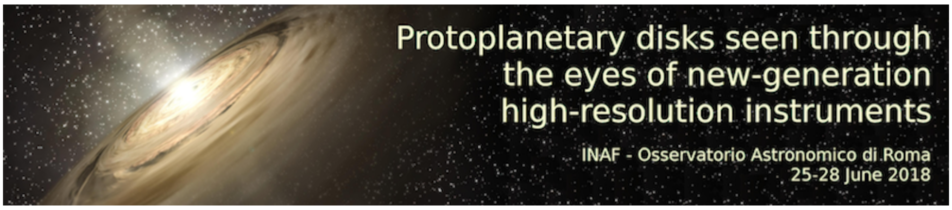


Contribution ID : **59** Type : **Poster**

First Studies of young stellar object and star-forming regions with Gaia

Studies of young stars and their forming environments are routinely performed at different wavelengths and with different observational techniques. The recent release of the Gaia catalog allows us to use yet another technique for these studies: astrometry. Here I present our recent findings based on Gaia DR2 data on the Lupus V-VI clouds, solving the old conundrum of the very low disk fraction in these clouds. I also show some initial results on the distance estimates to other star-forming regions.

Presenter(s) : MANARA, Carlo Felice (ESO)



Contribution ID : **60**　　　　Type : **Poster**

Shedding light on the dimming events of the CTTS RW Aur A

The study of the inner gaseous disc of YSOs is crucial to understand the physical processes ruling disc evolution and its connection with planet formation.
In this poster, I will present our results on the inner disc properties of the CTTS RW AurA. The RW Aur system has captured the attention of astronomers for its dimming events. By using X-SHOOTER spectra in the bright and dim states, we compare the NIR CO emission in order to shed light on this mystery. In general, the CO emission traces a warm (T=2000-5000K) and dense (NCO>1e12cm-2) gas as expected in the innermost region of discs. Both states need a cool (T=3000K) and dense (NCO=1e21cm-2) gas to reproduce the observations, with the emitting region located just inside the dust sublimation radius. By comparing the SED (from ~300 to ~1000 nm) and the CO emission of both states, we find that the dimming can be due to absorption by a layer of large grains with optical depth slowly declining from 2.8 to 1.6. The accretion rate does not significantly change in both states (Macc~2e-8 Mo/yr) if one assumes that the same layer of dust also occults the accretion line emitting region. This excludes accretion bursts as the main cause of RW AurA brightness variability.

Presenter(s) : KOUTOULAKI, Maria (DIAS)