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Studies of protoplanetary disks and forming planets with MAVIS

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The astonishing images of protoplanetary disks from ALMA and SPHERE show planet-induced structures. At the same time, directly imaged planets in disks (e.g., PDS70) prove that planets form early, and accrete material from the disk. So far, only the H α /H β emission lines probing this process were observed at low spectral resolution with MUSE-NFM. MAVIS will give us access to higher spectral resolution information on these lines, allowing us to better interpret the observations.

We also know that the majority of planets form close to massive stars, such as in the Orion Nebula Cluster. Studying these externally photoevaporated disks, proplyds, we can constrain the physical conditions of these systems. Initial investigations with MUSE-NFM are limited by the lack of access to key emission lines, some of which will be covered by MAVIS, and by the low spectral resolution, which does not fully allow us to access the kinematic information in the proplyds.

I will present both subjects, and hint how MAVIS can allow us to make a leap forward in our understanding of planet formation.

Primary author: MANARA, Carlo Felice (ESO - Garching)

Presenter: MANARA, Carlo Felice (ESO - Garching)

Session Classification: The Birth, Life, and Death of Stars and Their Planets