

WST - the Wide-field Spectroscopic Telescope: surveying the Universe in the 2040's and beyond



Contribution ID: 125

Type: **not specified**

Young stellar populations: the origin of stars and planets

Tuesday 11 March 2025 09:35 (20 minutes)

Star and planet formation are complex phenomena, whose outcomes depend on physical processes occurring across a wide range of scales. This complexity is reflected in the diverse phenomena that characterize the early pre-main sequence phase of stars and their disks, including gas accretion onto the central star, rapid and collimated jets, steady and slow outflows, and intense, rapidly variable magnetic activity. Furthermore, the early evolution of pre-main sequence stars, the dispersal of their disks, and the planet formation process can be significantly influenced by the surrounding environment through mechanisms such as external photo-evaporation and close stellar encounters.

In this talk, I will provide a brief overview of the properties of pre-main sequence stars and their disks, the impact of the star-forming environment on their evolution, and the importance of large-scale surveys for their study. Additionally, I will discuss how WST will contribute to the study of pre-main sequence stars and their disks across various star-forming regions in the Milky Way and nearby galaxies.

Author: GUARCELLO, Mario Giuseppe (Istituto Nazionale di Astrofisica (INAF))

Presenter: GUARCELLO, Mario Giuseppe (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Origin of the Solar System, planets, stars and the Milky Way