## BOSTON Boston University College of Arts & Sciences UNIVERSITY Institute for Astrophysical Research

2022–2023 ASTROPHYSICS SEMINAR SERIES

## Witnessing the Earliest Stages of Planet Formation

We have observed a stunning diversity in the properties of exoplanetary systems which questions our understanding of planet formation. Does this diversity arise from differences in initial conditions? Are there multiple modes of planet formation which preferentially build different types of planets? Or does this diversity stem from the evolution of the newly born planetary system as the natal protoplanetary disk dissipates? Over the last several years we have gained an incredible insight into how planetary systems form and evolve thanks to facilities such as ALMA which allow us to resolve — spatially and spectrally — these planetary disk has shifted from a smooth, flat 2D disk, to a highly structured and vertically extended disk which hosts complex flows and dynamical

features driven by embedded planets. I will provide examples of how these observations, coupled with state-of-the-art numerical simulations, are shining new light on the planet formation process, and how new facilities, such as JWST, are going to allow us to tackle new questions related to our origins.



Monday, May 1st 3:30 - 4:30 p.m. CAS 502

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