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Brown Dwarfs\(^1\) HENDRIK POULSEN NAUTRUP, Stony Brook University — Brown dwarfs (BD) are substellar objects that cannot sustain Hydrogen-fusion. Accreting masses between 0.012 M\(_\odot\) and 0.076 M\(_\odot\), BD’s share multiple characteristics with both low-mass stars and giant planets. But in contrast to planets, BD’s can be imaged directly, predominantly in the infrared regime. This and their similarity to stars and planets makes them ideal probes of galactic processes such as star-formation.

It is estimated that 60\% of all stars, including BD’s, have masses below 0.2 M\(_\odot\). Presently, there is no consensus on how such objects are formed. Thus, understanding the formation of brown dwarfs can provide unprecedented insight into the formation of low-mass stars.

In this talk I will give a brief introduction to brown dwarfs and discuss them in the context of giant planets and low-mass stars. The body of the talk will address three formation processes that may play a crucial role in BD and low-mass star formation. I will discuss how the different models agree with observational constraints such as the brown dwarf desert and argue that all mechanisms may be statistically relevant for certain scenarios.

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