

Colloquium

SFB 956

Conditions and Impact of Star Formation

28 November 2022

Monday 3:30 pm

Physikalische Institute Köln

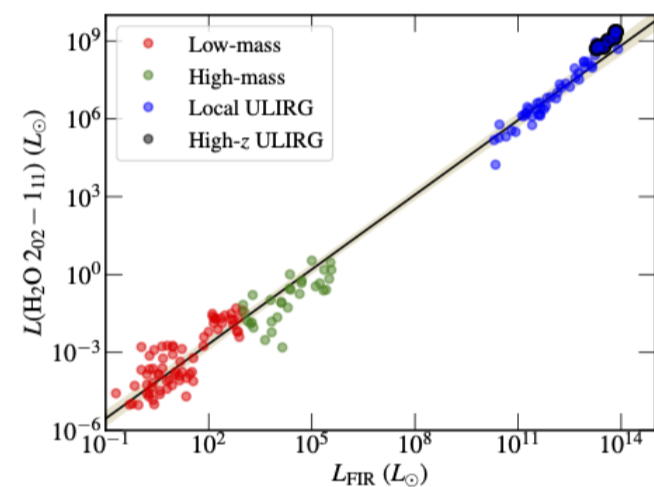
Lecture Hall I

Zülpicher Straße 77 | 50937 Cologne

Lars Kristensen

Center for Star and Planet Formation, Niels Bohr Institute,
University Copenhagen, Denmark

Using Astrochemistry to Understand Star Formation from the Milky Way to High Redshifts



Stars form deep inside molecular clouds. During the formation process, various molecules “light up” in different physical components of the forming protostellar system and at different evolutionary stages. Understanding the origin of this emission, both from a chemical and an excitation point of view, makes it possible to use the emission to trace star formation activity from the Milky Way and well beyond.

Here, I will present recent results highlighting how our understanding of the chemistry and excitation processes can be used to shed light on both Galactic and extragalactic star formation. These will include newly developed tools for inferring global star-formation parameters, e.g., rate and efficiency, from observations of certain molecules. These tools are now allowing us to bridge the gap between Galactic and extragalactic star formation, allowing us to address if stars form in the same manner throughout the Universe or not.