

Colloquium

SFB 956

Conditions and Impact of Star Formation

3 November 2022

Monday 3:30 pm

Physikalische Institute Köln

Lecture Hall I

Zülpicher Straße 77 | 50937 Cologne

supplementary colloquium

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Evolution of Molecular Clouds and their Star Formation Activity

I will discuss current theoretical views on the formation of molecular clouds (MCs) and their evolution, from their thin, cold atomic cloud stages, through their moderately star-forming stages, to their strongly star-forming epoch and subsequent destruction by their newly-formed massive star population. I will first discuss some problems of the model of turbulent support for MCs, and the reasons why MCs may instead be undergoing a process of global hierarchical gravitational contraction. Within this context, I will discuss the formation and flow in filamentary structures, the evolution of the virial parameter and the star formation rate, and the assembly of young stellar clusters and associations as a consequence of the hierarchical gravitational collapse in the clouds.

