

# Colloquium

SFB 956

Conditions and Impact of Star Formation

27 May 2019

Monday 3:00 pm

Physikalische Institute Köln

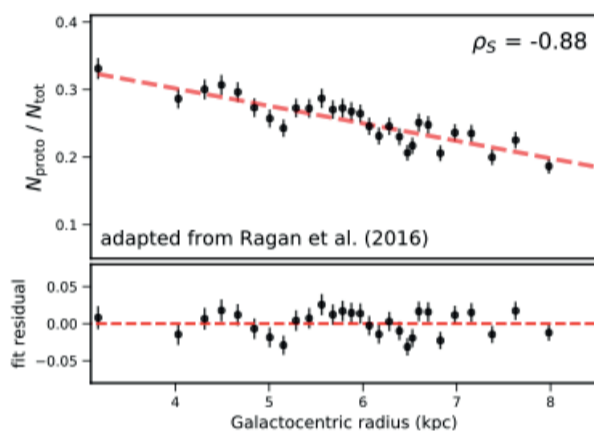
Lecture Hall III

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## Linking the Initial Conditions of Star Formation to Galactic Environment



Surveys of the Milky Way plane in a variety of gas or dust tracers have helped us develop an understanding of how the physical conditions of the interstellar medium vary throughout the Galaxy. We are now able to investigate what role Galactic environmental factors might play in giving rise to the conditions conducive to star formation. I will discuss a recent study conducted using the Herschel Infrared Galactic Plane Survey (Hi-GAL), which has catalogued over 100000 compact objects, or "clumps", throughout the plane and characterised their properties by modelling their spectral energy distributions (SEDs). We find that although the spiral arms of our Galaxy are where clumps are primarily (though not exclusively) concentrated, the clumps found in arms are not significantly more likely to be star-forming than interarm clumps. We also find a notable gradient in the prevalence of star formation in clumps with Galactocentric radius. I will also discuss our studies of "giant" 100-parsec scale molecular filaments in the Galaxy which enable us to link the clump scales up to Galactic scales. A comprehensive profile of the Milky Way from parsec to kiloparsec scales provides us with the appropriate context in which we can understand star formation in other galaxies.