

Colloquium

SFB 956

Conditions and Impact of Star Formation

14.11.2016

Monday 3:00 pm

Physikalische Institute Köln

Lecture Hall III

Zülpicher Straße 77 | 50937 Köln

Ana Lopez-Sepulcre

Institut de Radio Astronomie Millimetrique (IRAM), France

Broadband Spectral-line Surveys: A Unique Tool to Explore Early Star Formation

The past few years have witnessed a huge progress in the development of sensitive broadband (sub-)millimetre receivers, especially at single-dish telescopes. Thanks to this, it is now possible to carry out large spectral-line surveys that homogeneously cover tens or even hundreds of GHz in modest amounts of time, thus providing an unbiased, very powerful tool to explore the molecular composition of the region under study. As a result, a new and very promising road in molecular astrophysics is opening, in particular in the field of early star formation. I will introduce two large observational campaigns I have taken part in, ASAI and CHESS, entirely based on single-dish broadband spectral-line surveys of star-forming regions, and I will illustrate the huge potential of this approach with some selected results. Finally, I will introduce the importance of applying this technique also with (sub-)millimetre interferometers, where some first crucial steps are already taking place, and where the (hopefully near) future of unbiased spectral-line surveys lies.

