

Colloquium

SFB 956

Conditions and Impact of Star Formation

12 Dec 2016

Monday 3:00 pm

Physikalische Institute Köln

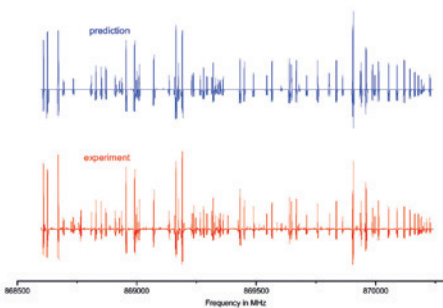
Lecture Hall III

Zùlpicher Straße 77 | 50937 Köln

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Submillimeter-wave Spectroscopy of Molecules with Large Amplitude Motions of Astrophysical Interest



This huge effort of gathering spectroscopic data is nowadays still pursued in order to prepare the sub-millimeter facilities like ALMA (Atacama Large Millimeter Array), NOEMA, SOFIA. It is expected that the high sensitivity and angular resolution reached by the instruments in these facilities combined with very precise spectroscopic analysis will provide accurate information about the formation of stars in the interstellar molecular clouds.

Since many years strong effort were done in order to improve the performances of submillimeter wave spectrometer. Laboratory spectroscopy take benefit of the development done with solid state devices based on Schottky diodes for the radiotelescopes. The new version used Direct Digital Synthesizer in order to speed up acquisition time. We construct a spectrometer covering a decade, from 150 to 1500 GHz, it scans the full range in 24 hours with high sensitivity and accuracy. This is particularly suitable for unstable or dangerous species. Last results about species presenting large amplitude motion will be presented.