

30th May 2013 - 10:00
Building 99, Seminar Room I+II (EG)

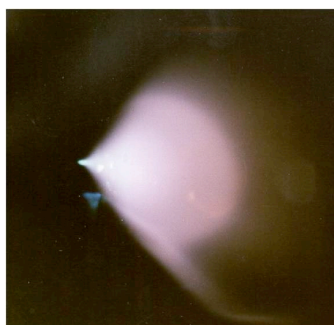
Thomas Giesen

Institut für Physik, Universität Kassel

Laboratory Investigation of Interstellar Molecules

The detection of interstellar molecules relies on the precise knowledge of spectral line positions from laboratory measurements. Highly reactive, short lived molecules are produced in a supersonic jet laser ablation source and studied by means of high resolution spectroscopy from millimeter-wavelengths to the Far- and mid-Infrared region. Less reactive molecules are produced in rf-discharge sources and in gas-flow-tubes fed with stable precursors. In recent years we have studied a number of small pure carbon-chain molecules, highly unsaturated carbon-species, oxides and sulfoxides, and stable organic molecules of astrophysical relevance as well.

The advent of new telescopes equipped with most sensitive receivers, e.g., the HIFI instrument aboard the Herschel satellite, and the airborne telescope SOFIA, have opened a new window for astrophysical observations at Terahertz frequencies revealing a complex interstellar chemistry. Recent results from the laboratory and from astrophysical observations will be presented in the talk.



Supersonic Jet of a Laser Ablation Source