Universitaet zu Koeln

Partner contact person: S. Schlemmer

Profile: **The Physikalische Institut der Universität zu Köln** is one of world-leading centers in Submillimeter Astronomy: it bridges from Instrument development, from fundamental research into junction design to receiver development and manufacture, to operation of telescopes, and analysis of observed data in the framework of radiative transfer, PDR and chemical models. Its particular strength is the existence of a world-class Molecular Laboratory spectroscopy group in the same Institute that is closely linked to the astronomical groups, and allows very intense and fruitful interactions. The scientific interests

represented in the Institute reach from Infrared Instrumentation and observations of Galaxies, through
observations of the turbulent interstellar medium and interaction regions between stars and molecular
clouds to massive star formation and astrochemistry of complex molecules. Its instrumental development has allowed it to participate in Herschel/HIFI (where Receiver Band 2 and the wide-band
Backends were built there). It also is participating in the operation of the NANTEN2 telescope in Chile, together with the Universities of Nagoya and Bonn, and wishes to transfer this involvement to
CCAT in the future. Again together with the University of Bonn, it hosts the German ALMA Regional Center (ARC) node, specializing in the deployment of relevant spectroscopical data, and
their use in astronomical applications.

Role of KOLN in Project: KOELN will be active in setting up collaboration with the USA through its collaboration with JPL (WP4). A particular attention will be directed towards US users connected to both databases (WP3).
KOELN will be involved in all activites related to school/higher education as well as citizen-scientists
in WP3. KOELN will participate to definition of policies and strategies in WP2. KOELN will organise meetings as indicated on GANTT charts (PERT diagrams) and in section 2.3. In particular KOELN will help to organise a meeting in the USA (15kE has been attributed).

Key persons:

S. Schlemmer, Professor

Expertise: Molecular laboratory spectroscopy, state-to-state rate coefficients.

Role in project: Interface to Laboratory part of VAMDC database.

P. Schilke, Senior Researcher

Expertise : High-resolution astronomical molecular spectroscopy, high-mass star formation, astrochemistry, radiative transfer, modeling of multi-line multi-species interstellar spectra.

Role in project : Link to ALMA, or other large projects linked to the study of interstellar medium - Design of tools.

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