

## Foreword

This three day workshop at the Physikzentrum in Bad Honnef gathered together about 70 scientists from many nations to discuss observations and modelling of the Far-Infrared and Submillimeter Emission of the Interstellar Medium in the Milky Way and in external galaxies, near and far.

This meeting follows a workshop on the same topic in Onsala 2005. Star formation is often shrouded in mystery by the parental dusty interstellar medium (ISM). However, the absorbed energy induced by embedded young sources is largely reradiated at submillimeter and far-infrared (FIR) wavelengths. This cooling emission provides the key tool to study the interplay between the ISM and star formation. FIR emission from gas and dust thus allows to study the role of the ISM in the cycle of matter in widely different environments, from high- $z$  galaxies to local star formation in the Milky Way. In the forthcoming years, new ground- and space-based observatories with unprecedented sensitivity and high resolution will invigorate this field. In the near future, the Herschel Space Observatory and the Stratospheric Observatory for Infrared Astronomy (SOFIA) will offer the possibility to observe spectrally resolved extragalactic and Galactic FIR cooling lines of the ISM on a routine basis.

We decided to bring together modellers and observers with the aim to stimulate the exchange of knowledge on the structure and composition of the ISM, in the Milky Way, in nearby galaxies, in galactic nuclei, as also in galaxies at high redshifts.

The workshop was organized in five scientific sessions: I. ISM phases and star formation in the Milky Way, II. Gas & dust, heating & cooling, microscopic processes and physical models, III. The Galactic center, the Magellanic Clouds, and external nuclei, IV. Dusty galaxies, the influence of low-metallicities and the importance of shocks, V. Chemistry at high redshifts.

This workshop would not have been possible without the support of many: the scientific and local organizing committees who did a lot of preparatory work and who guided us through the workshop, and also our secretaries and students who helped making the workshop a success: Steffi Krämer, Bettina Krause, Kefeng Sun, Markus Cubick, Marc Hitschfeld, and Martin Emprechtinger. A special thank you also goes to Victor Gomer and his team at the Physikzentrum.

Last not least, a big THANK YOU goes to all participants. It is you who made this workshop a success, through various contributions, through talks, posters, questions, ideas, and discussions, during the day and into the late evening hours.

Carsten Kramer  
Susanne Aalto  
Robert Simon

DOI: 10.1051/eas:0831001