The CDMS View on Molecular Data Needs of *Herschel*, SOFIA, and ALMA

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The catalog section of the Cologne Database for Molecular Spectroscopy, CDMS, contains mostly rotational transition frequencies, with auxiliary information, of molecules observable in space. The frequency lists are generated from mostly laboratory data employing established Hamiltonian models. The CDMS has been available online publicly for more than 10 years (www.cdms.de) [1, 2]. Initially constructed as ascii tables, its inclusion into a database environment within the Virtual Atomic and Molecular Data Centre (VAMDC, www.vamdc.org) has begun in June 2008. A test version of the new CDMS should be released prior to this conference.

The CDMS activities have been part of the extensive laboratory spectroscopic investigations in Cologne. Moreover, these activities have also benefit from collaborations with other laboratory spectroscopy groups as well as with astronomers.

In the first part of the presentation, we will provide some basic information on the CDMS and its participation in the VAMDC project. In the second part, some recent detections of molecules [3, 4] will be discussed to evaluate data needs of *Herschel*, SOFIA, and ALMA in terms of light hydrides, complex molecules, and metal containing species.

[1] H. S. P. Müller et al., Astron. Astrophys. **370**, L49-L52 (2001)
[2] H. S. P. Müller et al., J. Mol. Struct. **742**, 215-227 (2005)
[3] E.g. Astron. Astrophys. special issue sections on *Herschel* (**518** (2010)), *Herschel*/HIFI (**521** (2010)), and SOFIA/GREAT (**542** (2012))
[4] See also http://www.astro.uni-koeln.de/cdms/molecules