2D mapping of ice species in molecular cores* 

Jennifer A. Noble1, H. J. Fraser1, K. M. Pontoppidan2, Y. Aikawa3 and I. Sakon4

1Department of Physics, University of Strathclyde, 107 Rottenrow, Glasgow G4 0NG, Scotland
e-mail: jennifer.noble@strath.ac.uk
2California Institute of Technology, Division of Geological and Planetary Sciences, MS 150-21, Pasadena, CA 91125, U.S.A.
3Department of Earth and Planetary Sciences, Kobe University, Kobe 657-8501, Japan
4Department of Astronomy, Graduate School of Science, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0003, Japan

Abstract. We present data from our ice mapping program IMAPE on the AKARI satellite. Initial results show a correlation between the abundance of CO2(νs) and H2O(νs), consistent with previous studies. We can trace abundances of molecules across a core using a single observation.

Keywords. astrochemistry, ISM: clouds, ISM: molecules, techniques: spectroscopic

1. Introduction

In dense cores, much of the molecular material is frozen on the surface of dust grains. AKARI allows the simultaneous observation of multiple lines of site (los) through a core. We observed a 1’x1’ region towards 20 cores, between 2.5–5.0 μm. Data was reduced using our own pipeline (Noble et al. in prep.), producing spectra for 31 los.

2. Results and Conclusions

The abundance of H2O and CO2 was calculated for each los using laboratory data, and is presented in Figure 1. Abundances agree with previous studies (as shown in Figure 1) and a clear correlation is seen between n(H2O) and n(CO2) in the cores observed.

References


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