P202a Resolving DCN/HCN towards five protoplanetary disks using the *MAPS* data

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The chemistry of protoplanetary disks strongly influences the chemical composition of newly forming planets. ALMA makes it possible to study the chemistry of disks in unprecedented detail. In this work, we will focus on deuterium chemistry. The thermal history and formation location of material in the Solar System is often inferred by measuring its D/H ratio. This requires knowledge about the deuteration processes occurring during the planet formation era. We aim to study these processes by radially resolving the DCN/HCN ratio towards five disks observed by the ALMA large program *MAPS*. We investigate the following questions:

1. How does the DCN/HCN ratio vary with radius in a protoplanetary disk?
2. What is the dominant deuteration process of HCN?

We find that DCN/HCN can vary considerably for different parts of the disks, ranging from 10^{-3} to 10^{-1}. In particular, the inner disk regions generally show significantly lower HCN deuteration compared to the outer disk. This suggests a limited contribution of high temperature deuteration to DCN formation. The derived DCN/HCN ratios are significantly larger than observed for comet Hale-Bopp, suggesting that comets are not formed directly from the gas we observe.