Chemical Abundance Profiles in a 2-D Planet-forming Disk

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Deuterium chemistry is a useful tool for tracing the influence of interstellar material on the composition of protoplanetary disks and for tracing the formation history of planetary bodies. Several deuterium bearing molecules have been measured in solar system materials and their deuterium enhancements derived. In addition a couple of deuterium molecules have been observed in disks (c.f. *Kessler et al.*, 2002). Here we present the results of a chemical model of a protoplanetary disk that includes deuterium chemistry. We show the calculated radial and vertical profiles and compare them to the available observations.

[a] Kessler, J.E., Qi, C., and Blake, G.A., Observations of HDO and DCN in circumstellar disks around the protostars LkCa 15, MWC 480 and HD 163296, AAS 200th Meeting, Albuquerque, NM, Session 850, #85.02, 2002.

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