

Chemistry of a protoplanetary disk with grain settling and Lyman α radiation.

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We discuss the results of a chemical model of protoplanetary disks wherein dust grains are evolving through coagulation and settling. In our models we directly calculate the changing propagation and penetration of the high energy radiation field as the dust grains evolve. We also have explored the effect of Lyman α photons on the disk chemistry. For this presentation we will discuss how the chemistry changes due to grain evolution and with variable Lyman α penetration. More specifically we will examine the chemistry of key observed species such as CO, HCN, CN, and also H₂O.

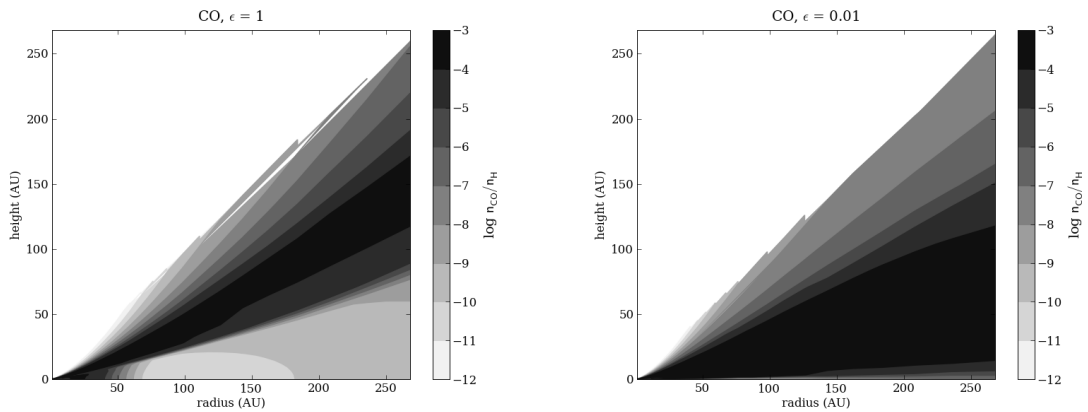


Figure: Abundance of CO relative to H₂ in protoplanetary disks with UV radiation field penetration included. Figure on the right includes the effects of dust settling.