**Goal & Methods**

Revisit and test key assumptions in the accretion model of gas onto WDs by Metzger et al. (2012)
- They assume compact disk of silicate solid debris and “metallic” gas which has sublimated
  → We infer the disk chemical composition from photospheric spectra
- They assume weak viscosity, $\alpha \approx 10^{-3}$
  → We calculate $\alpha$ from $H_2O$ ionization fraction

**Disk Composition**

Can be inferred from photospheric spectra. Accreted parent bodies are comparable to carbonaceous chondrites. By allocating the number of O to other major elements in their oxide forms, we infer $\sim 10\% H_2O$.

**Conclusions**

- Water likely comprises $\sim 10\%$ of WD disks, arising from the dehydration of clay minerals.
- UV photons can ionize water molecules in the upper layers of WD disks, but do not penetrate very far.
- The WD disk viscosity parameter from UV photoionization, $\alpha = 10^{-9}$, is much smaller than that assumed by Metzger et al. (2012).

**Future Work**

- Metzger et al. (2012) assume all solids are large enough ($\sim 10\, \text{cm}$) to settle to midplane, but $10\, \mu\text{m}$ dust likely mixed with gas$^{[15]}$.
- Thermionnic emission from hot ($T \approx 10^3 \, \text{K}$) dust will increase ionization$^{[16]}$.
- Investigate other accretion mechanisms.

**References**


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