Journey of an icy pebble

-- from a hydrodynamic view

Yu Wang[1], , Chris W. Ormel[1], Pinghui Huang, Shoji Mori, Xuening Bai, Rolf Kuiper

[1]Department of Astronomy, Tsinghua University, Beijing, China

water snowline

irradiative heating

(3) Wang et al, in prep, 2024

settling

(re)condensation

diffusion

radial drift

sublimation

"vapor retro-diffusion"

"traffic-jam"

viscous heating

accreting planet

pebble accretion

or

(2) Jiang, Wang et al 2023

(1) Wang et al 2023

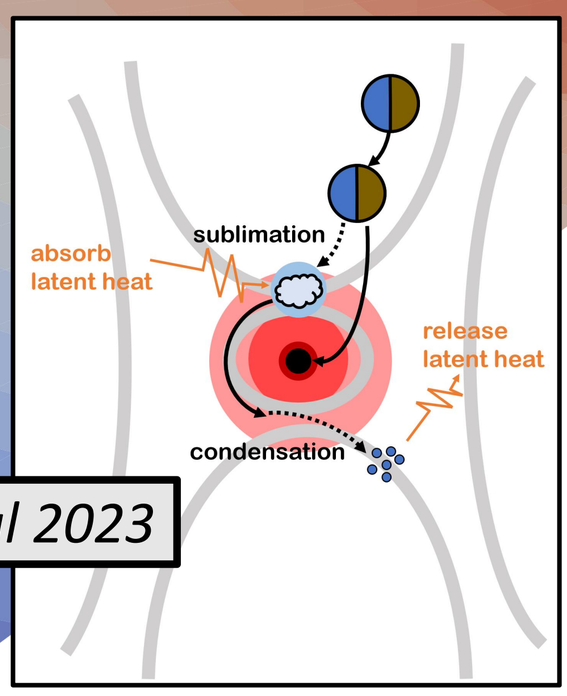
Refractory

Water ice

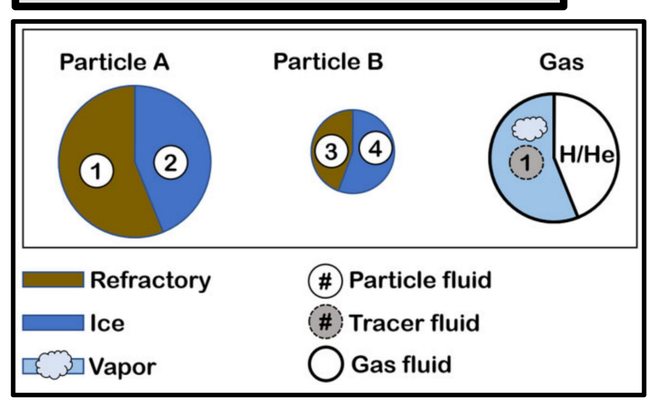
pebble

vapor

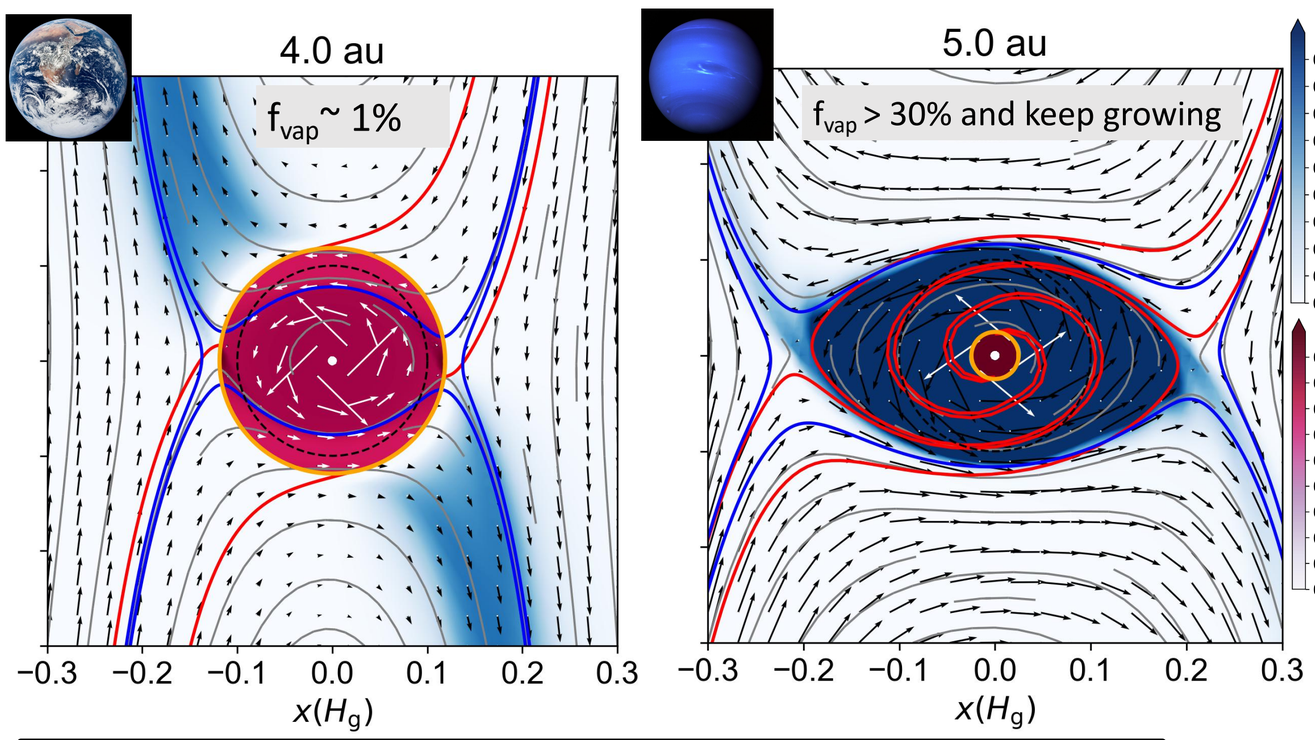
ice grain



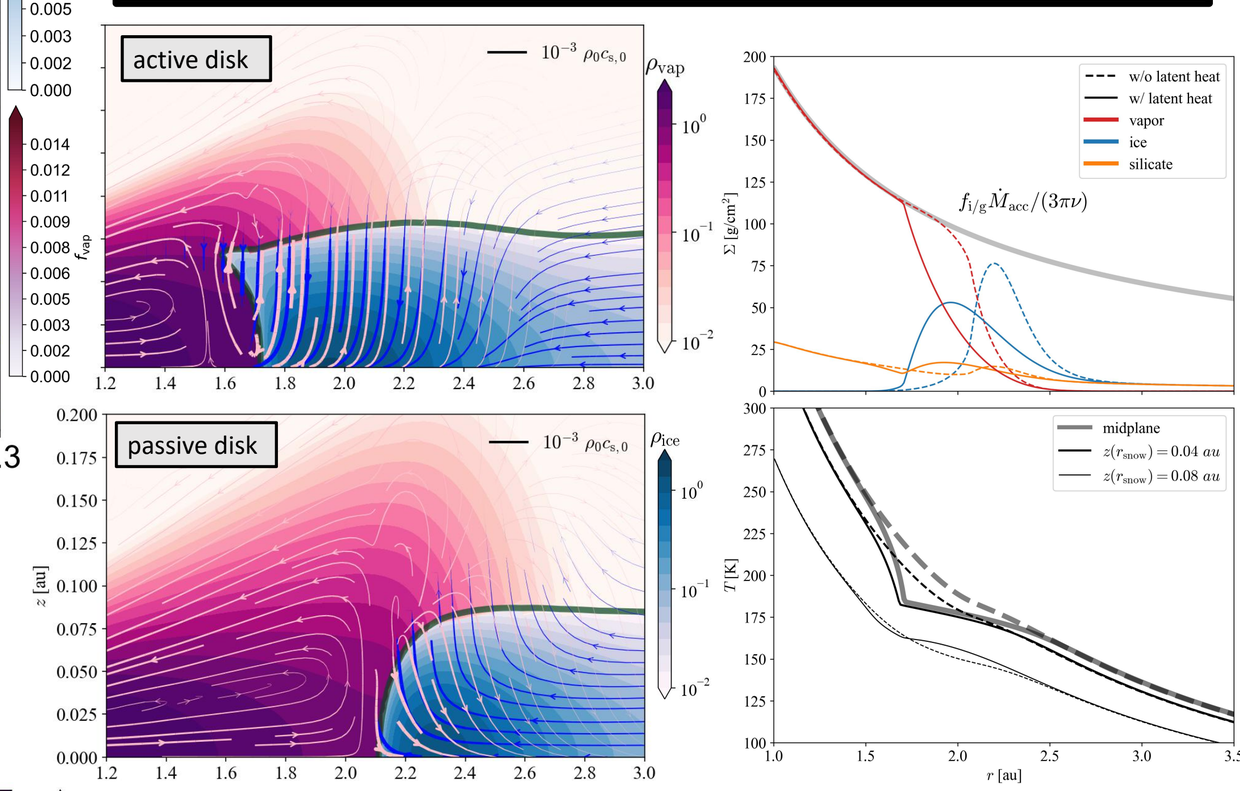
(1) Development of a phase change module



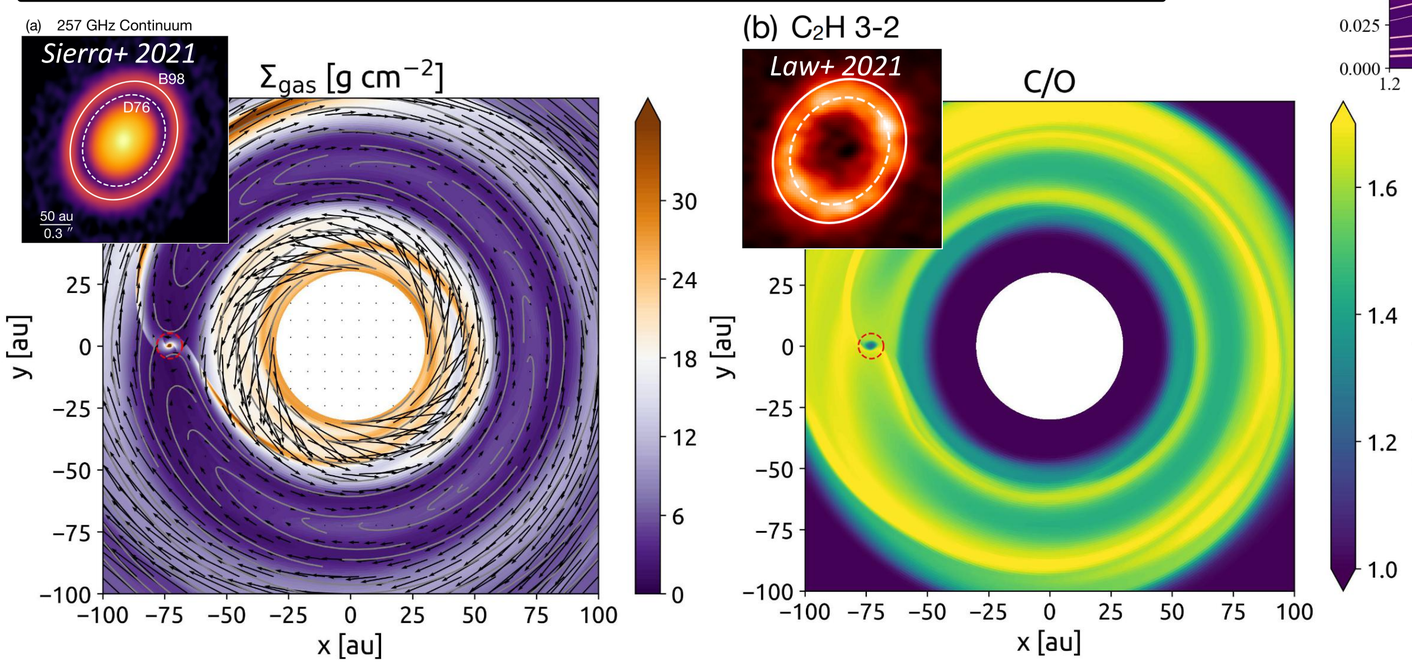
(1) Recycling of volatiles make dry planet



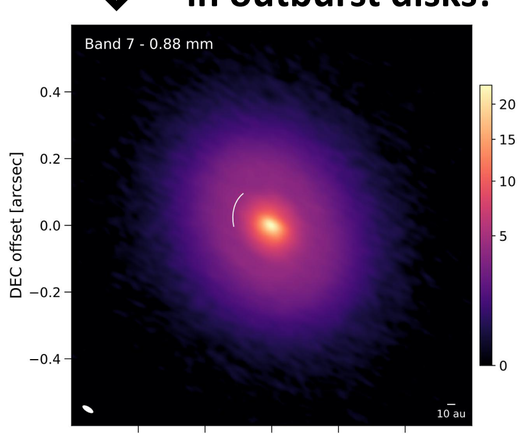
(3) Water-cycle accross the snowline facilites planetesimal formation; Latent heat cooling creates a temperature plateau.



(2) Release of volatiles by accreting giants alters the disk chemical inventory



Hunt water snowline in outburst disks!



Hough+ 2024

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