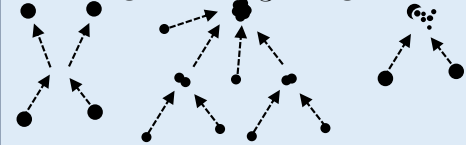


### Particle growth

Bouncing    Sticking    Fragmentation

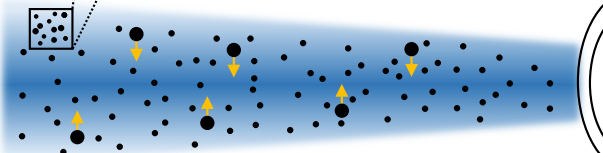


Ideal  
MHD

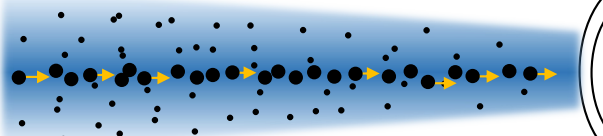
Nonideal  
MHD

1000K

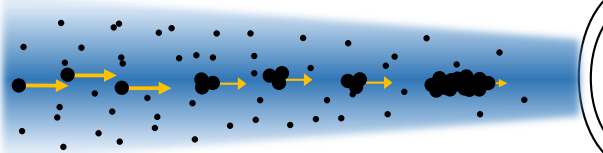
Magnetic field



Settling



Radial drift



Streaming instability (SI)

- Dust collide, grow, & settle towards the midplane
- Pebbles decouple from the gas & radially drift towards the star
- Collections of pebbles drift slower  
→ Formation of dense filaments
- Filaments gravitationally collapse to  $\sim 100\text{km}$  planetesimals