What don’t we know about first and second generation star formation?

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• Known knowns - what we know we know

• Known unknowns - what we know we don’t know

• Unknown unknowns - what we don’t know we don’t know
Some known unknowns...

• Can we ignore magnetic fields?
• Is energy input from decaying / annihilating DM important?
• What regulates accretion onto Pop. Ill protostars?
• How many stars form per dark matter halo? How does this depend on M, z?
• Is HD cooling important?
• Can HII regions from Pop. III stars be trapped locally?
• How efficient is metal mixing in Pop. III supernova remnants?
• How much dust do Pop. III supernovae form, and what is its nature?
• How is the dust distributed w.r.t. the metals?
• Can we test any of this observationally?