Primordial SNe Working Group

Progenitors and Explosive Engines

- Uncertainties in the rates and types of Pop III Explosions

More work needs to be done. Unclear whether a PS-based approach is sufficient as one needs local feedback.

- Uncertainties in the progenitors: spins, mixing

More work needs to be done. Unclear whether the binaries affect the stellar evolution. Separation of ~100 AU places this in the grey area.

- Uncertainties in Nucleosynthesis

Constrain by looking at absorption systems but we need bright QSOs at z>7. Nuclear reaction rates can be measured but the hydrodynamical uncertainties remain serious.

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- Environment

Probably the pre-existing environment is simple (at least for high-z explosions). Mass ejection by the star itself (LBV) might be a more serious issue.

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Observations

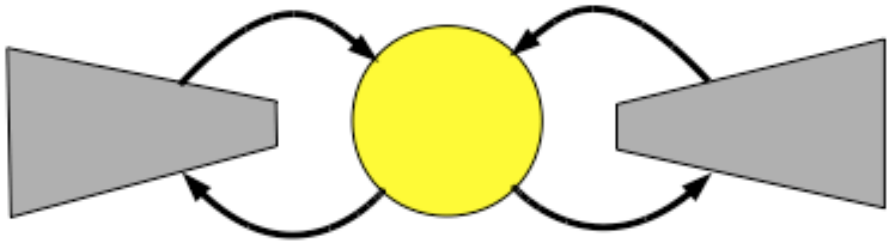
- Understanding UV emission from supernovae
- Identifying Pop III supernovae

Very difficult problem. Best approach may be to go after core-collapse GRBs. How do we know it's a Pop III? spectroscopic confirmation.

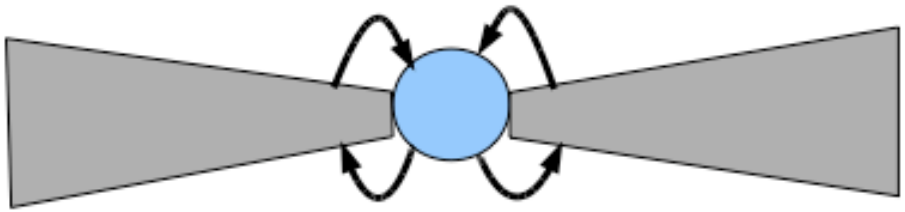
- Lensing
- GW/neutrino observations
- SN 2006gy

Most likely not a PISN

Initial Rotation of Massive Stars



Pop I/II



Pop III