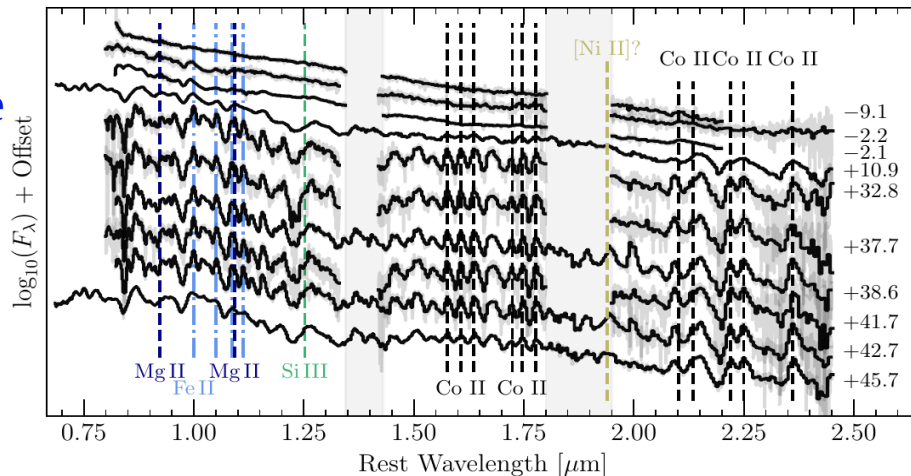
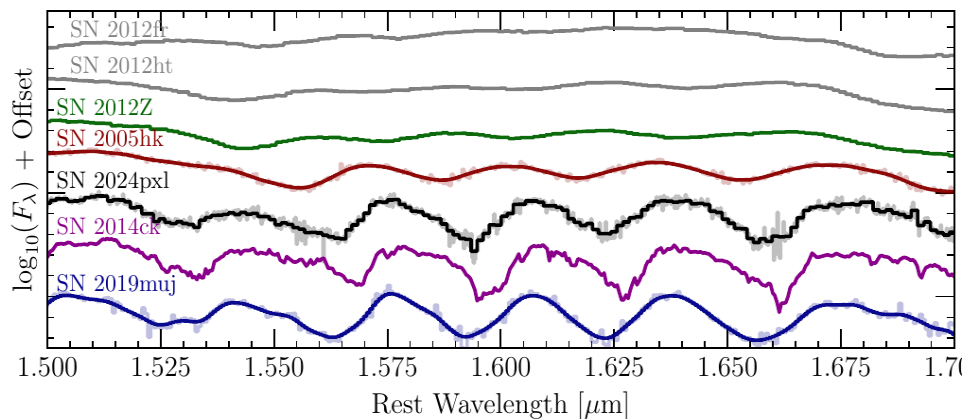


# Early Spectroscopy of Type Iax Supernova

Supernova 2024pxl is of **type Iax**: slower, less destructive CO white dwarf explosion compared to **type Ia**. **Rapid near-infrared spectroscopy important**. Very early **SpeX/Prism NIR** spectra of a Iax SN:

- No Helium emission: **no non-degenerate companion**
- No CI emission: **hot** explosion (C is ionized)



- **Featureless continuum** up to  $\sim 1$  month: hot, dense explosion due to **slow expansion, limiting adiabatic cooling**
- Cobalt emission lines **spectrally resolved** (in contrast to Ia): slower expansion velocity
- Supersonic detonation models can be excluded

*Hoogendam+, ApJ 988, 209, 2025*