

Modelling & Fire Drills

Main Role of Modelling in Fire Drills

- Provide models and variations of expected signals in order to test machinery in SNEWS (links to all other subgroups)
- Given nature of the group, not really any internal fire drills

Overlaps with drills in other subgroups

Pointing & Triangulation

- Potential range of $\nu+e^- \rightarrow \nu+e^-$ signals to calibrate and tune localization
- Variations in predicted signal turn-on to test triangulation in different detectors

MultiMessenger Followup

- (with detector response) Provide models and estimates for supernova progenitor properties

Detector Response

- Range of models to ensure we understand/test the limits of detectors to seeing galactic (beyond?) supernovae. i.e. “corner cases”
- Provide highest-confidence set of potential supernova signals to allow for testing, fire-drilling

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Preparing for Fire Drills

- Completing SNEWPY software set to allow seamless transition from model output to fluences at detectors (90% there for acquired models)
- Working with detector response group to carry those fluences through to event realization

Needed steps to Milestones on slide 1:

- Ensuring wide range of models covering scenarios
 - Rotation, electron-capture supernovae, more black hole formation
- Investigative work on signals for triangulation
- Settling on deliverables of SNEWS to the multimessenger community