Nordic PhD Winter School 2023: Reading Material

Below you will find a list of papers, useful notes recommended by the lecturers, and information on the software that will be encountered during the program. Reading all of this is NOT required, but could be helpful!

Suggested by Name: Maya Fishbach

- Mandel & Farmer, "Merging Stellar Mass Black Holes," (2022) <u>https://arxiv.org/abs/1806.05820</u>
- Mapelli, "Formation Channels of Single and Binary Stellar-Mass Black Holes," (2022)
 https://arxiv.org/abs/2106.00699
- Heger, Müller & Mandel, "Black holes as the end state of stellar evolution: Theory and simulations," (2023) <u>https://arxiv.org/abs/2304.09350</u>

Suggested by Name: Matt Nicholl

- https://ui.adsabs.harvard.edu/abs/2017ApJ...849...70V/abstract
- https://ui.adsabs.harvard.edu/abs/2021ARA%26A..59..155M/abstract
- https://ui.adsabs.harvard.edu/abs/2021ARA%26A..59...21G/abstract

Suggested by Name: Evan O'Connor

- M. Oertel et al. "Equations of state for supernovae and compact stars" 2017 APS: <u>https://journals.aps.org/rmp/pdf/10.1103/RevModPhys.89.015007</u>, arXiv: <u>https://arxiv.org/abs/1610.03361</u>
 Evan: This is an *extensive* review, just to emphasize what is written above, this is not required reading, but a good overview of what I'll try and convey in lectures.
- A. Baxter et al. "SNEWPY: A Data Pipeline from Supernova Simulations to Neutrino Signals" 2022 ApJ: <u>https://iopscience.iop.org/article/10.3847/1538-4357/ac350f</u> JOSS:<u>https://joss.theoj.org/papers/10.21105/joss.03772</u> arxiv: <u>https://arxiv.org/abs/2109.08188</u>
 Evan: Neutrino detection will just be a small part of the lectures, but this paper

introduces SNEWPY (<u>https://github.com/SNEWS2/snewpy/</u>) a python package for exploring neutrino signals from supernovae. I'll demo this, and have some example exercises for anyone interested in getting to know SNEWPY.

Suggested by Rodrigo Fernández:

- Janka & Bauswein (2022): "Dynamics and Equation of State Dependencies of Relevance for Nucleosynthesis in Supernovae and Neutron Star Mergers" <u>https://ui.adsabs.harvard.edu/abs/2022arXiv221207498J/abstract</u> Recent, succinct review of explosion dynamics, ejecta components, and EOS dependencies in CCSNe and NS mergers. No need to read in advance.
- Holmbeck, Sprouse, & Mumpower (2023): "Nucleosynthesis and observation of the heaviest elements" <u>https://ui.adsabs.harvard.edu/abs/2023EPJA...59...28H/abstract</u> Accessible review on r-process nucleosynthesis, not required.