



Figure 13. A measure of r-process strength across our parameter space, using identical parameters as figure 12 but with Y_e fixed at 0.48. The same two r-processing regimes emerge, but the wave stress regime is pushed to higher masses and neutrino luminosities by the lowered neutron abundance.

impact on the final nucleosynthesis. If wave shock heating begins before a temperature of around 7 GK, the final nucleosynthesis is strongly impacted and even NDWs with modest wave luminosities and fiducial PNS masses can produce a solar-like r-process pattern. If wave shock heating begins below this temperature range, its impacts

on nucleosynthesis are muted. For gravito-acoustic waves, the radius of shock formation depends on their frequency, so higher frequency waves are likely to have a larger impact on nucleosynthesis. For higher PNS masses, wave stress contributions can still drive a strong r-process even if shock heating begins too late to affect seed formation.