Impacts of dineutrons and tetraneutrons on the nuclear compositions and neutrino reaction rates in the core-collapse supernova

Tatsuya Matsuki ¹, Shun Furusawa ^{2,3}, Katsuhiko Suzuki ¹

arXiv:2412.19521 [nucl-th]

1. Tokyo University of Science 2. Kanto Gakuin University 3. RIKEN

11th Supernova Neutrino Workshop. The University of Tokyo, Japan. March 3–4, 2025



Chemical potential of leptons is taken from the 2D supernova simulation

 \checkmark ²n and ⁴n may accelerate the neutronization of PNS and shorten its neutrino cooling time.