High-Performance Code for Nuclear Level Density

Outcome: reaction rates for nuclear astrophysics and nuclear engineering
Algorithm: Dynamical Load Balancing
Performance metric: strong scaling
Machine: Franklin@NERSC

the rp-process path

waiting point nuclei

\( ^{68}\text{Se} \)
\( ^{64}\text{Ge} \)


\[ \text{Nuclear Level Density: JMOMENTS code} \]

\[ \text{Strong scaling} \]

\[ \text{64\text{Ge}: comparison for two model spaces} \]

\[ \text{pf shell, DIM=10^9} \]
\[ \text{pf+g_{9/2} shell, DIM=10^{14}} \]