

# Fission modeling for the astrophysical r-process

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The astrophysical rapid neutron capture (r-) process is thought to be responsible for the production of all of the observed thorium, uranium and plutonium in the cosmos. Many properties of the heaviest nuclei remain unmeasured, thus simulations of the r-process must rely on theory. Fission modeling, in the form of fragment yields, reaction rates and branching ratios, play an especially crucial role in determining the final outcomes of the heaviest nuclei and for the lighter fission product region. We review recent global calculations of fission properties based on theoretical modeling capabilities at Los Alamos, discuss their impact in the r-process and summarize our important results.