Abstract Submitted
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Macroscopic-microscopic fission yields for nucleosynthesis[1]
NICOLE VASSH, University of Notre Dame — The rapid neutron capture process (r-process) is believe to synthesize the heaviest elements found on the periodic table. This remarkable process is believed to occur in exotic environments such as compact object mergers and possibly supernovae. In the most neutron-rich components of explosive outflows, nuclear fission, or the splitting of heavy nucleus into smaller lighter fragments, may play a crucial role in directing the nuclear flow far from stability. Where exactly the fission fragments are distributed across the chart of nuclides is an open theoretical question. I will address this open issue using recent state-of-the-art fission yield calculations that employ the theoretical macroscopic-microscopic framework. I will present the impact of these calculations in simulations of the r-process.

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