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(G*) Constraining the Neutron Capture Rate for the Short-Lived 91Sr Nucleus

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In recent years, attention has been brought to intermediate neutron capture processes, working between the rates and environmental neutron densities of the r-process and s-process, while their full contribution to abundances is not yet fully characterized. Operating in neutron densities of 10^{13} - 10^{20} neutrons/cm^3, the i-process and n-process have been shown in sensitivity studies to take reaction pathways through experimentally accessible neutron-rich nuclei, providing an opportunity to better characterize the neutron capture rates that define these processes and their resultant abundances.

In this contribution we will review the β-Oslo analysis of the notable n-process isotope, ^{91}Sr, taken with the SuN total absorption spectrometer at the NSCL in 2018. By simultaneously measuring both γ-ray energies and excitation energies in this experimental setting, a coincidence matrix was produced to perform the Oslo analysis, providing experimental information on the nuclear level density and gamma ray strength functions, two critical components to finding the neutron capture cross section. Since the neutron capture rates are historically unconstrained by experimental work, this provides an opportunity to further reduce these uncertainties, better characterizing the contribution of such nuclei to these exotic captures processes.

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