

# Nuclear and astrophysics aspects for the rapid neutron capture process in the era of multimessenger observations



Contribution ID: 4

Type: **not specified**

## Stellar Models for R-process Nuclear Astrophysics

*Thursday, 4 July 2019 17:05 (25 minutes)*

*Abstract:* One of the primary mechanisms for guiding experimental research in nuclear astrophysics is the sensitivity study. In a broad sense, these studies involve a stellar model in which various quantities related to nuclear reactions are varied to examine the effects. These variables can include a single, or multiple, reaction rates, Q-values, nuclear masses, and others. Subsequently, various aspects of the model are examined, such as elemental abundances, thermodynamics, and astronomical observables and compared with theory and observations. This talk will examine the underlying stellar models, their strengths and limitations both broadly and as it applies to R-process, and discuss the findings of the most recent works, as well as improvements that must be made in the future in order to improve the accuracy of the results of the sensitivity study.

**Primary author:** LAUER, Amber (Triangle Universities Nuclear Laboratory)

**Presenter:** LAUER, Amber (Triangle Universities Nuclear Laboratory)

**Session Classification:** Session