Contribution ID: **160** Type: **Invited/Solicited talk in mini-symposium**

Neutron star mergers, kilonovae, and the synthesis of heavy elements

Tuesday, 12 December 2023 13:40 (20 minutes)

This talk reviews recent developments related to simulations of neutron-star mergers, the generation of kilonovae, and the synthesis of rapid neutron capture (r-process) elements in the Universe. In particular, the talk will discuss recent constraints on r-process nucleosynthesis from the O3 run of the LVK gravitational-wave detectors. It will also focus on recently identified magnetohydrodynamic jet-formation mechanisms in neutron-star mergers and their implications for the generation of GW170817-like massive blue and red kilonovae and short gamma-ray bursts.

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