

## ASTROPHYSICS SEMINAR SERIES



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Tuesday, April 2      12:30 pm - Rm 184 NSH

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### **r-Process nucleosynthesis and kilonovae in neutron star mergers**

Compact object mergers involving at least one neutron star have become the prime candidates for the site of r-process nucleosynthesis, which is responsible for producing about half of all the elements above the iron peak. I will provide an overview of r-process nucleosynthesis especially in the context of neutron star mergers. I will discuss the range of possible nucleosynthetic outflows in different merger scenarios, as well as the expected associated kilonova signatures. I will also review GW170817, the first binary neutron star merger observed with LIGO/VIRGO, and what we learned about r-process nucleosynthesis from the kilonova that was observed in detail after the merger event.



PHYSICS