

# Challenges in Core-collapse Supernova Nucleosynthesis

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Core collapse supernovae are the violent death of massive stars. These massive stars and their explosions are a main site for nucleosynthesis, synthesizing a wide range of elements from oxygen to uranium. Despite their importance for the origin of elements, the explosion mechanism of core-collapse supernovae is still not yet fully understood. In this talk, I will discuss how this affects supernova nucleosynthesis yields, how abundance observations in metal-poor stars provide constraints for supernova nucleosynthesis, and where a better understanding of the nuclear physics inputs is needed. I will conclude by highlighting some recent advances in supernova nucleosynthesis research at NC State.

Wednesday

November 19

4 P.M.

Rm 118 NSH

Refreshments @  
3:30 in 202 NSH