

# A renaissance of $\beta$ -decay spectroscopy

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Refreshments at 3:30 P.M. in 202 NSH

All elements heavier than iron are initially synthesized as very exotic radioactive isotopes in extreme astrophysical scenarios, such as supernova explosions. It is now becoming possible to study these nuclei in the laboratory thanks to advances in production and detection techniques. Recent precision measurements of masses and new decay half-lives of these species have been demonstrated to have a profound effect on astrophysical calculations. These developments signal the start of a new golden age of  $\beta$ -decay spectroscopy.

I will present our recent results of newly measured beta-decay half-lives in nuclei of astrophysical relevance. We explored the effect of our new half-lives in calculations of explosive nucleosynthesis. The values were found to have a much larger effect on the calculations than expected from previous studies. Furthermore, we performed a first survey of the delayed neutron emission from these nuclei. The decay strength resolved in neutron decay might have the clues needed to explain the unusual half-lives we observed. Finally, I will discuss the exciting opportunities in the long term at next generation facilities such as RIKEN and FRIB.