

## 35 Years of $\beta$ -Decay Spectroscopy

**Abstract:** The study of  $\beta$  decay has been an integral part of nuclear physics research for a very long time. From the implementation of the very first  $\beta$  and  $\gamma$ -ray detectors to the current large detector arrays,  $\beta$ -decay spectroscopy has provided detailed information on nuclear structure. I have only been involved with  $\beta$ -decay spectroscopy for 35 years, but I have seen many major advances in the field. Yet the basic goals of the research have remained. Specifically, the understanding of nuclear structure and how it affects other areas of physics. In this talk I will discuss the research in which I have been involved since my early years in graduate school and how this research has informed us about the evolution of nuclear structure away from the valley of stability. The main focus will be on the region near doubly magic  $^{78}\text{Ni}$ . I will include forays out into nuclear astrophysics and nuclear reactors to show how  $\beta$ -decay spectroscopy is important to other fields. Along the way I hope to convince you that  $\beta$ -decay studies are not boring or mundane, but can be very exciting and should see much growth in the coming years.

June 27, 2017

2:00pm

## 50 Years of beam Seminar Series

**Dr. Jeff Allen  
Winger**

Department of Physics and  
Astronomy,  
Mississippi State University

**Cyclotron Institute  
Room 228**

**Refreshments will be served  
at 1:45pm**