

## Tensor interactions in the odd-mass Cu nuclei: structure of $^{71}\text{Cu}$

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The discovery of a rapid drop in the  $5/2^-$  yrast levels in odd-mass  $^{71,73}\text{Cu}$  reported in the Letter by Franchoo et al., [1] set off a long chain of both experimental and theoretical studies of the level structure in the closed-shell Ni nuclei near the oscillator shell boundary at  $N = 40$  that has included adjacent odd- $Z$   $_{27}\text{Co}$  and  $_{29}\text{Cu}$  nuclei. In the process, the importance of the Tensor interaction between protons and neutrons with opposite spin-orbit coupling has proven critical to the description of the low-energy levels in the odd-mass Cu nuclei. [2] The recently reported level structure for  $^{70}\text{Ni}$  that includes a proposal for a low-energy prolate shape-coexistent minimum indicates the usefulness of further study of  $^{71}\text{Cu}$  that has a single proton beyond  $^{70}\text{Ni}$ . [3] In this report, new data from that same data set will be presented and shown to include a similar, strongly deformed, prolate minimum at an energy below 1 MeV. Analysis, including magnetic moments, of the whole sequence of odd-mass Cu levels will highlight the systematic energy-level changes and the influence of the Tensor interaction for the single 29<sup>th</sup> proton as  $N$  increases from 28 to 50.

- [1] S. Franchoo et al., *Phys. Rev. Lett.* **81**, 3100 (1998).
- [2] T. Otsuka et al., *Phys. Rev. Lett.* **95**, 232502 (2005).
- [3] C. J. Chiara et al., *Phys. Rev. C* **91**, 044309 (2015).