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**Four-, Six- and Eight-quasiparticle Isomers in  $^{174}\text{Lu}$**   
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Australian National University, P. CHOWDHURY, S.K. TANDEL, Uni-  
versity of Massachusetts Lowell — We report on new studies of  $^{174}\text{Lu}$   
using a  $^{136}\text{Xe}$  beam from the ATLAS accelerator at Argonne National  
Laboratory that was incident on targets of natural Lu and enriched (to  
47%)  $^{176}\text{Lu}$ . The targets were 6 mg/cm<sup>2</sup> in thickness with 25 mg/cm<sup>2</sup> of  
Au backing. The beam was pulsed approximately 1 ns on/825 ns off at  
energies of 6 MeV per nucleon. The recoils were stopped at the target  
position in the focus of the Gammasphere spectrometer, comprised for  
this experiment of 96 Compton-suppressed Ge detectors. Several high-K  
isomers were discovered in  $^{174}\text{Lu}$  and their structure characterized, in-  
cluding  $K^\pi=13^+$  ( $\tau=280$  (25) ns),  $14^-$  ( $\tau=55$  (6) ns),  $(21^+)$  ( $\tau=140$  (15)  
ns) and  $(26^-)$  ( $\tau=350$  (28) ns). The  $13^+$  isomer was found to decay to  
both low-K ( $K^\pi=0^+$ ) and high-K ( $K^\pi=7^+$ ) states originating from cou-  
plings of the  $\pi$  7/2[404] and  $\nu$  7/2[633] orbitals. The path via the  $K^\pi=0^+$   
band cannot be explained through conventional Coriolis mixings and the  
accidental mixing scenario between the isomer and a nearby collective  
level was invoked [1]. Details of these measurements will be presented,  
together with a comparison with predictions from multi-quasiparticle  
calculations.

[1] G.D. Dracoulis et al., submitted to Phys. Rev. Lett.

- Prefer Oral Session  
 Prefer Poster Session

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