

Abstract Submitted  
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**Properties of  $^{130}\text{Te}$  for Neutrinoless Double Beta Decay**<sup>1</sup> T. BLOXHAM, Lawrence Berkeley National Lab, S.J. FREEMAN, University of Manchester, J.D. SCHIFFER, ANL, D. SHARP, Manchester, A.M. HOWARD, University of Manchester, C.M. DEIBEL, J.A. CLARK, B.P. KAY, ANL, J. THOMAS, University of Manchester, P. PARKER, A. HEINZ, Yale University — We have started a set of measurements aimed at determining the nuclear structures relevant to the decay from  $^{130}\text{Te}$  to  $^{130}\text{Xe}$ . So far the neutron occupation has been determined for  $^{130}\text{Te}$  at the Yale tandem accelerator, and similar measurements are planned for  $^{130}\text{Xe}$ . The proton BCS pairing is known to be broken in  $^{130}\text{Xe}$  (W.P.Alford et al, Nuclear Physics A323, pp329, 1979) who have seen strong population of excited  $0+$  states in the pair-adding  $^{130}\text{Te}(^3\text{He},n)^{132}\text{Xe}$  reaction. We have carried out similar studies for pair-removal for neutrons, and within the experimental uncertainties of a few percent find no corresponding breaking in the neutron BCS state in the  $^{130}\text{Te}(p,t)$  reaction.

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