

Abstract Submitted  
for the HAW09 Meeting of  
The American Physical Society

**Effects of Finite Size of Nuclei on their Thermodynamic Properties**<sup>1</sup> E.M. MANION-FISCHER, REU student from Kent State University, D.C. FULS, S. SHLOMO, Cyclotron Institute, Texas A&M University — We investigate the effects of finite size on the thermodynamic properties of nuclei. For this purpose we first calculate the single particle level density,  $g(\epsilon)$ , which was derived using the Thomas-Fermi approximation and a finite single particle potential of a trapezoidal form. We carried out these calculations for nuclei with  $Z=N$ . We then calculate the level density parameter and the temperature dependence of the excitation energy  $E^*$  and the entropy  $S$ . We demonstrate the important effects the finite size of nuclei has on these values by comparing our results with the values obtained using the commonly adopted Fermi Gas model.

<sup>1</sup>Funded by DOE and NSF-REU Program.

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Date submitted: 03 Aug 2009

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