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## NUCLEAR LEVEL DENSITIES FAR FROM STABILITY

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We have recently completed studies of all nuclei with known levels with  $20 < A < 100$ . The level densities were as a function of  $A$  and  $Z - Z_0$  where  $Z$  is the nuclear charge and  $Z_0$  is the equilibrium charge for a given mass. These studies indicated that the level density will be lower off the line of stability based on the known levels at low excitation energy. This formulation of the level densities has been incorporated in the Hauser-Feshbach program, HF2002. Work is now in progress for a series of experiments to investigate the dependence of nuclear level densities off of the line of stability at higher excitation energies. Current plans call for measurements using the  $(^3\text{He}, n)$  reaction,  $(^{12}\text{C}, p)$  and  $(^{12}\text{C}, \alpha)$ . Future investigations are planned using radioactive beams and a carbon target. This work was supported under U.S. D.O.E. grant No. DE-FG02-88ER40387.