

Abstract Submitted  
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**Moments Method for the Nuclear Density of States** EDGAR TERAN, CALVIN JOHNSON, San Diego State University — We utilize statistical spectroscopy to model the nuclear level density in the interacting shell model. Low-lying statistical moments of each configuration of the shell model space are computed. Partial (configuration) densities are generated from the moments, and the sum of all the contributions is the total level density. Modified Breit-Wigner (MBW) distributions are used to model the partial densities. The properties of such functions allow for exact reproduction of the moments at large asymmetries, which are needed to accurately reproduce the overall level density. We work in the sd-shell with USD interaction, and the pf-shell with GXPF1, FPD6G and KB3G interactions. Results from level densities generated with method will be shown in the sd-shell and pf-shell, as well as comparisons to exact calculations and experimental data.

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