

Abstract Submitted  
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**Ergodicity of the  $\Delta_3(L)$  statistic, in a RMT analysis of neutron resonance data**<sup>1</sup> DECLAN MULHALL, University of Scranton, ZACHARY HUARD, University of Cincinnati, VLADIMIR ZELEVINSKY, National Superconducting Cyclotron Lab, MSU — It is demonstrated that the  $\Delta_3(L)$  of Random Matrix Theory (RMT) is not ergodic, in the sense that for a given GOE spectrum,  $\Delta_3(L)$  can vary significantly from the predicted value. This leads to a natural spread that needs to be included when comparing the  $\Delta_3(L)$  statistic of experimental data with the RMT result. However, this spread is smaller than the ensemble value usually quoted, and the possibility of extracting information about the mixing in spectra with superimposed sequences of levels is examined. An empirical expression for the appropriate “error bars” is given, and an analysis of neutron resonance data is performed.

<sup>1</sup>Office of Research Services, University of Scranton

Declan Mulhall  
University of Scranton

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