Abstract Submitted
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Statistical Analysis of Nucleon Resonances: Updating the Nuclear Data Ensemble[1] D.J. SISSOM, J.F. SHRINER, JR., Tenn. Tech. Univ., G.E. MITCHELL, N. Car. St. Univ. and TUNL — Statistical properties of both neutron and proton resonance data are thought to be described by the Gaussian Orthogonal Ensemble of Random Matrix Theory. The most convincing evidence is from the analysis by Haq *et al.* of the Nuclear Data Ensemble (NDE),[2] a collection of resonance levels from 32 different nuclides. Since the data that comprise the NDE are over 20 years old, it seems reasonable to examine current resonance data with the goal of providing an updated NDE. We have examined current resonance data not only for the nuclides in the original NDE but also for other even- even targets as well. Tests of data quality have included N(E) staircase plots and comparison of reduced width distributions with the Porter-Thomas distribution. New data exist for 16 of the 32 original nuclides, and data from five other nuclides also seem suitable for inclusion. A description of the new data set and results for several of the standard statistical measures, including the nearest-neighbor spacing distribution and the Dyson-Mehta Δ_3 statistic, will be provided.

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[2]Phys. Rev. Lett. **48**, 1086 (1982).

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