

Abstract Submitted
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Automated evaluation of experimental data for nuclear level densities FRAZIER BAKER, BRYCE HINA, LEVI SCHNEIDER, GABRIELA POPA, Ohio University Zanesville — We created a code to automatically extract and process specific data about atomic nuclei to be used on various platforms including Windows and Macintosh operating systems. The code is comprised of three main subroutines. The first part of the code saves files from the website of the National Nuclear Data Center - Brookhaven National Laboratory. The second subroutine extracts the information needed for calculations from each data file. The third subroutine implements theoretical models to calculate state densities. The fourth subroutine creates and displays the calculated and experimental state densities versus the excitation energy in a graph for each nucleus. During this project we combined various programming languages, such as C, FORTRAN, Python, and XML. We wrote the code for cross-platform use and tested it on various operating systems, including Mac OS X, Windows 7, and Windows 8. This facilitated collaboration among our researchers and will allow for future developments by other parties.

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