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Energy Densities of Simulated Nuclei and collisions¹ IAN FREE-MAN, Illinois State University — Traditional methods of simulating nuclear fragmentations require considerable amounts of computational resources. To combat this, we have utilized a new classical nuclear model to both reduce computational load and maintain a high level of accuracy. We have successfully produced simulated nuclei of lead-208 and will report on the energy densities of simulated collisions. We will also report on the stable configurations of the nuclei, and qualitatively analyze the implications of the resulting energy heatmaps. This work provides a complete proof of concept for studying nuclear collisions and multifragmentation, which will be developed in future work with parallelized code to survey the distributions of the fragmentations and compare them to results from real collisions.

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