Improved numerical projection of angular momentum[1] KEVIN O'MARA, CALVIN JOHNSON, San Diego State University — Nuclear many-body states have good angular momenta, but many theoretical building blocks such as deformed Slater determinants do not. Hence one must numerically project out states of good angular momenta, usually through a computationally taxing three-dimensional integral. We took an existing code for angular-momentum projected Hartree-Fock[2] and improved its performance, partly through judicious ordering of the loops, precomputing arrays of important combinatorics, and careful application of parallelization. We also investigated a novel inversion scheme. This work is potentially applicable to multiple approaches in many-body calculations,[3] and should also be generalizable to particle number projection.

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