Abstract Submitted
for the SES12 Meeting of
The American Physical Society

Nuclear pairing problem with configuration-space Monte-Carlo approach[1] MARK LINGLE, ALEXANDER VOLYA, Florida State University — Pairing correlations play an important part in the dynamics of nuclei. We present a Monte Carlo algorithm that allows for the large-scale pairing problem to be handled. The approach does not suffer from the limitations of other methods, such as problems with particle number conservation or issues related to the limit where the pairing interaction is weak. The configuration space Monte Carlo procedure for pairing treats the components of the wave function as probabilities; due to boson-like nature of nucleonic pairs the approach is not subject to the sign problem. The application of the algorithm to various cases of pairing are discussed and results for large model systems are presented.

Mark Lingle
Florida State University

Date submitted: 18 Sep 2012   Electronic form version 1.4