Abstract Submitted for the HAW05 Meeting of The American Physical Society

Hartree-Fock-Bogoliubov calculations with Gaussian expansion method HITOSHI NAKADA, Chiba University — An algorithm of the Hartree-Fock-Bogoliubov (HFB) calculations using the Gaussian expansion method is newly developed. By this method we can handle various effective interactions on the same footing, and the wave-function asymptotics, either exponential or oscillatory ones, are efficiently handled even for finite-range interactions. In the previous study we have shown by the spherical Hartree-Fock calculations that the shell structure around N=16 and 32 depends on the effective interactions (e.g. the Skyrme, the Gogny interaction and M3Y-type interactions) and their parameters, to an appreciable extent. Applying the HFB calculations, influence of the pair correlations on the magicity of N=16 and 32 will be discussed.

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Date submitted: 20 May 2005

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