Hartree-Fock calculations for quantum dots

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1 Results

Here we list results for $\omega = 1.0$ a.u. The number of atoms equal filled up shells, that is they follow so-called *magic numbers*, $A = 2, 6$.

Table 1: Results for $\omega = 1.0$ a.u. All values in a.u.

Shells	$A = 2$	$A = 6$
4	3.162691	20.766919
5	3.161921	20.748402
6	3.161921	20.720257
7	3.161909	20.720132
8	3.161909	20.719248
9	3.161909	20.719248

Table 2: Single particle state energies ϵ_i^n for $\omega = 1.0$ a.u., three shells and 6 electrons before convergence ϵ_i^0 and after convergence ϵ_i^f. The Hartree-Fock method converged after 9 iterations.

Before ϵ_i^0 [a.u.]	After ϵ_i^f [a.u.]
1.0	4.87879
1.0	4.87879
2.0	5.71988
2.0	5.71988
2.0	5.71988
2.0	5.71988
3.0	6.86513
3.0	6.86513
3.0	6.86513
3.0	6.86513
3.0	7.24094
3.0	7.24094