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- [60] For instance, at  $U = 0$ , the 3-slave-boson approach can only result in  $n^0 = n^1 = n^2 = 1/3$ , whereas the exact solution for 4 bosons on a 4-site lattice gives  $n^0 = 0.35, n^1 = 0.38, n^2 = 0.20, n^3 = 0.059$ , and  $n^4 = 0.008$  at  $\beta = 1$  [62].
- [61] In particular, for  $\bar{U} = 4$  we find at  $T_c$  that  $n^0 = 0.125, n^1 = 0.751, n^2 = 0.122$ , and  $n^3 = 0.0018$ , whereas the 3-slave-boson result is  $n^0 = 0.111, n^1 = 0.778$ , and  $n^2 = 0.111$ .
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