

Problem#12

Perform all the steps for bosons that were discussed in class for the case of fermions related to the single-particle propagator. In particular, obtain the Lehmann representation and the result for the ground-state energy (and expectation values of one-body operators).

Problem#13

Calculate the first-order contribution in the numerator term for the one-particle propagator involving the two-body interaction for a particular time-ordering of your choosing. Focus on the evaluation of the expectation value (with respect to the noninteracting ground state) of the sequence of operators generated by your choice for the time-ordering.

We will discuss problems 11, 12, and 13 during the meeting on Monday, October 23, at 3pm.