

In this manuscript the authors compare two different methods: the QFI maximization and the time-optimal selectivity. The former aims to maximize the quantum Fisher information, while the latter seeks to optimize the selectivity of the control. The authors provide a concrete example of the estimation of the values of the Hamiltonian parameters of a spin-1/2 system coupled to a bosonic reservoir at zero temperature. They compare the two methods using the Bures distance, the QFI, and the CFI. The authors conclude that the QFI and the selectivity methods can be seen as complementary approaches to the same problem, and that the selectivity method offers better flexibility in the computation of the control. The manuscript provides some interesting observations on the similarities and differences between two different methods but there are a few points that the authors need to clarify:

1. The connection between QFI and the Bures distance is only valid locally for neighboring states where $D(\rho_x, \rho_{x+\delta x}) \ll 1$, using Eq.(16) in the regime $D^2 = 2$ for the connection to selective control is a bit problematic.
2. In the case of fixed POVM, the comparison of QFI based optimization and the selective control seems unfair. Here the relevant quantity is CFI, which may be connected to the selectivity of the probability distributions.
3. The performance of the selective control for parameter estimation depends on the choices of the target states. It is not clear how these states should be chosen. Even for the specific qubit example for the estimation of γ presented in the manuscript, the choice of the target state as the completely mixed state is not well explained. It is not clear why the other pole is not used as the target state. Even the steered state can not reach it, why it is not chosen so the steered state can be made as closer to it as possible?
4. As briefly mentioned in the conclusion, the QFI has a closer connection to the selective control when the target states are not fixed, but directly maximizing the distance of the final states. With fixed target states, it seems the two methods are equivalent only when $D(\rho_0, \rho_{target,0}) + D(\rho_1, \rho_{target,1}) = D(\rho_0, \rho_1)$ where ρ_0 and ρ_1 are the final states. For the examples where the selectivity defers from the QFI, I would suggest the authors to consider checking this condition and if possible choose a different set of target states that satisfy this condition for a further comparison.