

In this manuscript, the authors studied the estimation of  $N$  distributed parameters via squeezed or over-squeezed spin states, where the estimations of the  $N$  parameters are obtained by measuring the Hadamard coefficients of a 1D or 2D signal. The problem is interesting and the presentation is clear. There are, however, a few points that the authors should clarify.

- The authors mentioned in the introduction that the advantage of the proposed scheme is 'a single collective measurement, instead of  $N$  local measurements in each site, has to be performed in order to obtain a given linear combination of the unknown parameters with quantum gain.' It is not quite clear what 'a single collective measurement' referring to here. Since to estimate  $N$  parameters, the proposed scheme needs to measure  $N$  Hadamard coefficients, thus total  $N$  collective measurements are required. I suspect the authors mean the same measurement is used for measuring the  $N$  Hadamard coefficients, while this could be an advantage, this comes with the cost that each time different controls pulses need to be added compared to the local measurement scheme. The authors should elaborate more under which circumstances this indeeds provides an advantage.
- The authors did not mention whether the scheme has any advantage on the sensitivity compared to the  $N$  local measurement on each site, a discussion would be helpful.
- The advantage on the sensitivity of using squeezed stated, instead of the coherent state, is given by the coefficient  $\xi^2$ . There should be some quantitative analysis on the scale of this coefficient, specifically its relation with  $N$ .
- There should be more elaborated introduction on previous work on distributed quantum sensing with clear explanation on the common and unique part of the proposed scheme.