We thank the editor for the constructive comments. The comments are addressed below under the comments, which are pasted in *italics*.

Topical Editor Decision: Publish subject to minor revisions (review by editor) (07 May 2021) by
Rohitash Chandra
Comments to the Author:
The manuscript needs to have a Background and related work section to provide more details of what has been done in the literature. The literature review should extend and include recent works in the area of MCMC and the related problems of interest in this paper.

We have split the Introduction into two sections: "1. Introduction", and "2. Background and related work" as requested. We have expanded the literature review and added new references, including to relevant MCMC topics.

The literature review is not adequate and also the experiments do not show results compared with published methods from the literature.

We are not aware of any literature where parameters of chaotic models were estimated using observations that are temporally distant from each other. We have expanded discussion of filtering and summary statistics-based methods in sections 1 and 2.

Need a table of results summary and if any related works are there in the literature - include them for comparison.

See previous answer above. We have added a table summarizing the speed-ups provided by the LA-MCMC method in the Conclusions.