Statement of Revision

In the following, we provide an account of the changes that have been made in order to address the concerns of the reviewers. The nature of the review for this paper is such that the comments were provided both in paragraph form and in bulleted form. When addressing the paragraph form, we have identify the comment using the notation **(Rx:Py)** where **x** is the Reviewer number and **y** is paragraph referred to. When addressing the bullet form, we utilize the form **(Rx:z)** where **x** identifies the Reviewer and **z** identifies the bulleted comment. Each bulleted comment included in the listing is followed by a description of modifications to the paper addressing the comment. Furthermore, changes in the paper have been marked with a color coding. We hope that this method is sufficiently clear. We would like to thank the reviewers for their time and effort at providing feedback in order to improve the exposition of the paper.

Comments by Associate Editor.

In this paper the authors provide an overview of methods and algorithms to build data-driven models that may be used for estimation and prediction of spatio-temporal processes.

Four reviews were obtained for this paper. In general, the reviewers agree that the topic of this paper is of interest to the control community, and that the proposed approach appears sound. However, the reviewers point out a number of serious concerns, in particular:

Comparison with the state of the art: the comparison with the state of the art appears insufficient (see Reviewers 5, 6, and 7). This makes the contribution of this paper unclear (see Reviewer 6).

Presentation style and rigor: the presentation style is quite poor (see Reviewers 5, 6, 7, and 9). In particular, the paper contains several typos and the presentation of the results is rather dense. Most importantly, the authors refer to an Appendix for the presentation of the proofs of the theoretical results; however, such an Appendix is missing. Collectively, these shortcomings make this paper very difficult to read and evaluate – see, in particular, Reviewer 7. Furthermore, note that CSM papers do not have appendices, so the location of these proofs will have to be changed.

Tutorial contribution: the insufficient comparison with the state of the art, the poor presentation style, and the lack of proofs for the theoretical results make the tutorial value of this paper quite weak. In other words, it would be very difficult for a practitioner to use this paper as a guide for developing estimation and prediction algorithms for spatio-temporal processes (when should one use the methods presented in this paper? are there implementation guidelines? etc.). The authors do reference a software library - in my opinion, this paper should more explicitly reference such a library in order to better explain the practical and implementation aspects of the proposed methodology.

I concur with the reviewers comments and I recommend that the authors prepare a significantly revised version addressing all the concerns and suggestions, with a key focus on strengthening the tutorial value of the paper. In addition, the authors should address the following comments:

(AE:1) We thank the associate editor for the opportunity to submit a revision. We have prepared a significant revision that includes the complete proofs of all of the results presented in this paper.

The sidebar "Key control problems in agriculture," while interesting, appears excessively long. The authors should shorten it, and make its relevance to the topic of this paper clearer.

(AE:2) We have reduced the key control problems sidebar. We have significantly reduced the length of the sidebar by reducing the general discussion about agriculture. We have focused instead the sidebar on the challenges in spatiotemporal estimation for advancing agricultural robotics.

The quality of many of the figures is quite low (see, for example, Figure 1, Figure 8, and Figure S8). The authors should make all figures clearly readable.

(AE:3) XX Josh, Harshal can you handle this? XX

Comments by Referee 1. reviewer ID 4665

Comments by Referee 6. reviewer ID 4667

Comments by Referee 7. reviewer ID 4669

Comments by Referee 9. reviewer ID 4673

Comments by Referee 1. reviewer ID 4665

Again, we thank the anonymous reviewers for their comments. We hope we addressed all concerns and improved the overall readability of the paper. We are happy to provide further clarification or revisions as requested.