

# Referee report - Revision of "*Proper account of auto-correlations improves decoding performances of state-space (semi) Markov models*"

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I am very satisfied by the modifications made by the authors in response to my comments. I also like the new title for the article. I only have a few minor comments on the new parts of the manuscript, listed below, which should be very quick to address.

L.119: "and where" Did you mean **while** ?

TWO LINES BELOW L.132: "on the jumps between the state process" Did you mean something like "*on the process driving jumps between states*" ? Overall the syntax of this sentence is a bit clumsy, to the point of obscuring the meaning.

P.7, FIRST EQUATION: Above the equation, you write that the sojourn time in the present state depends (only) on the present state, so shouldn't  $P(\tilde{T}_{n+1} = k)$  be  $P(\tilde{T}_{n+1} = k | \tilde{S}_n = s)$  ?

"DISCRIMINATION BETWEEN PDFs", L.6: "**the** state is no longer considered (...) and **the** state estimator"

P.11, L.7: "insure"  $\Rightarrow$  "ensures" ?

## Questionnaire

### Title and abstract

Does the title clearly reflect the content of the article? **Yes**

Does the abstract present the main findings of the study? **Yes**

### Introduction

Are the research questions/hypotheses/predictions clearly presented? **Yes**

Does the introduction build on relevant research in the field? **Yes**

### Materials and methods

Are the methods and analyses sufficiently detailed to allow replication by other researchers? **Yes**

Are the methods and statistical analyses appropriate and well described? **Yes**

### Results

In the case of negative results, is there a statistical power analysis (or an adequate Bayesian analysis or equivalence testing)? **Yes**

Are the results described and interpreted correctly? **Yes**

### Discussion

Have the authors appropriately emphasized the strengths and limitations of their study/theory/methods/argument? **Not applicable**

Are the conclusions adequately supported by the results (without overstating the implications of the findings)? **Yes**