# **Supplementary material**

Longitudinal data, trajectories and telemonitoring: how to analyze them?

Example of sleep data

## Codes R et codes Python

Mettre un lien gitlab ou mettre le code R puis le code Python en 2 parties ou mettre les documents d’origine (.R et .py) en SM dans des fichiers autres.

## ~~Codes Python (ou les mettre en doc .py à part)~~

## Results with Python

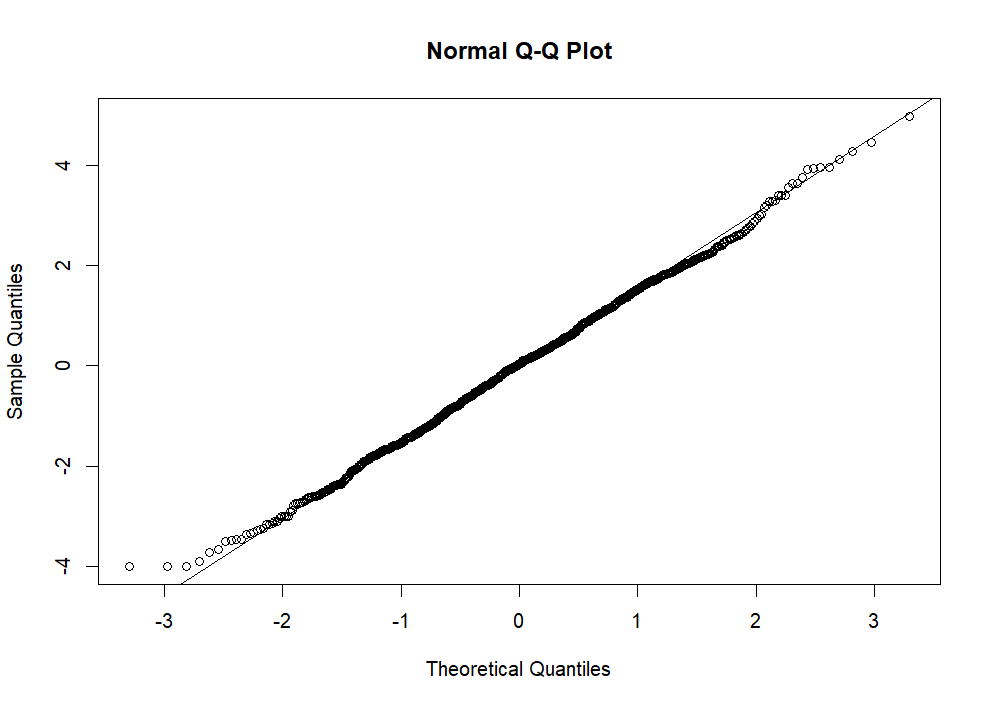
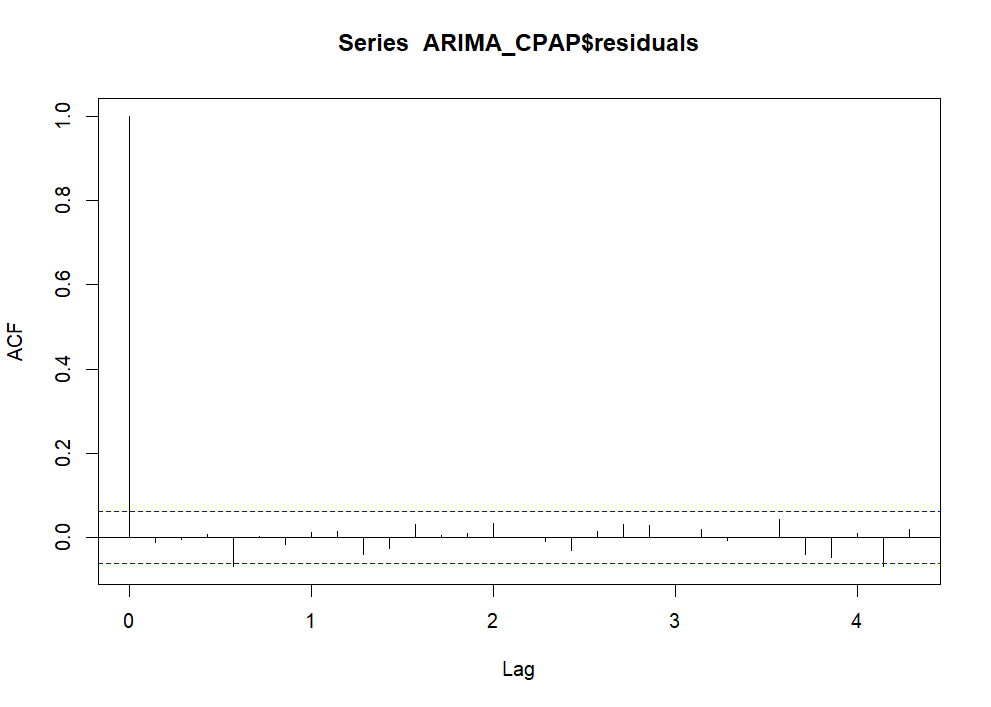
1. ANOVA model
2. χ² model
3. LCA model
4. K-means model
5. GMM model
6. Mixed model
7. GBTM model
8. LTA model
9. ARIMA & CCF model
10. DTW model
11. Joint model
12. Hidden Markov model

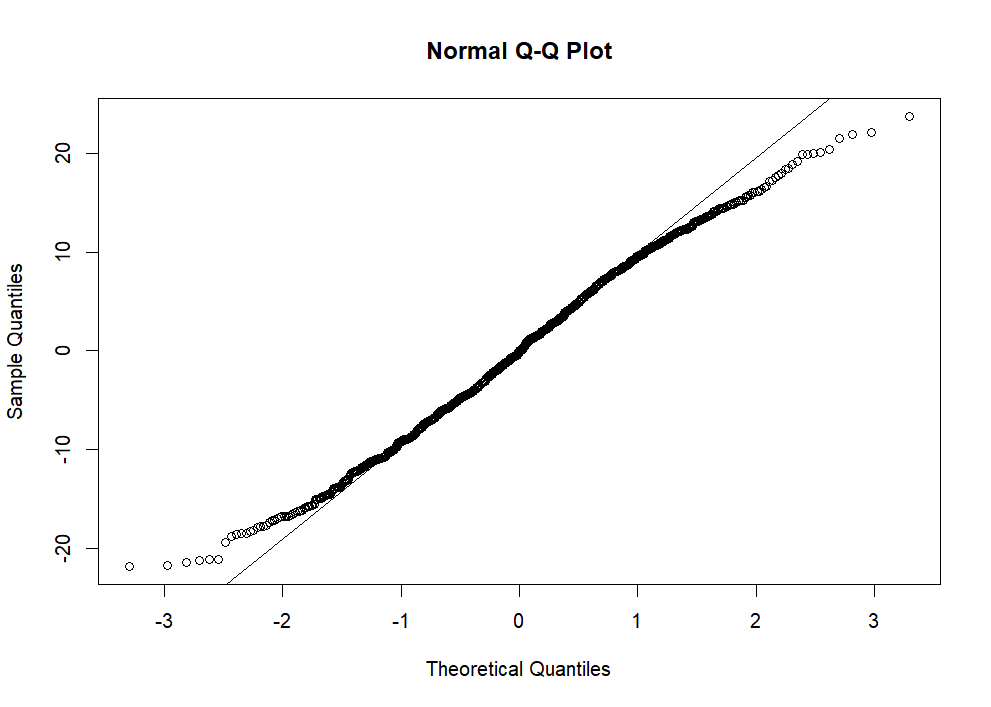
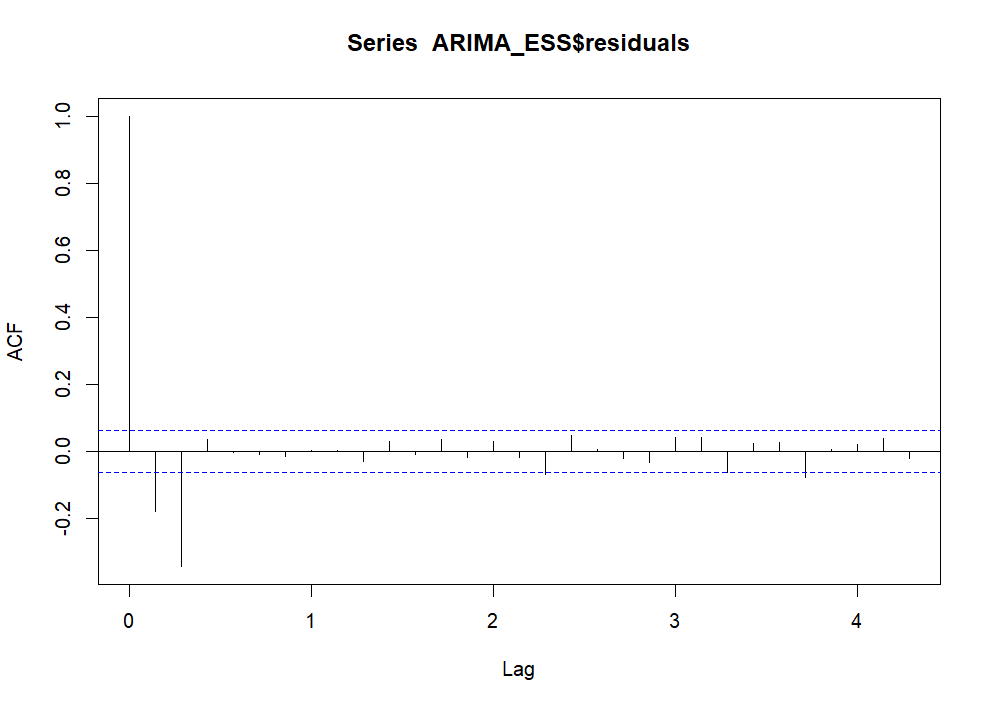
## Additional information on models

## Figures

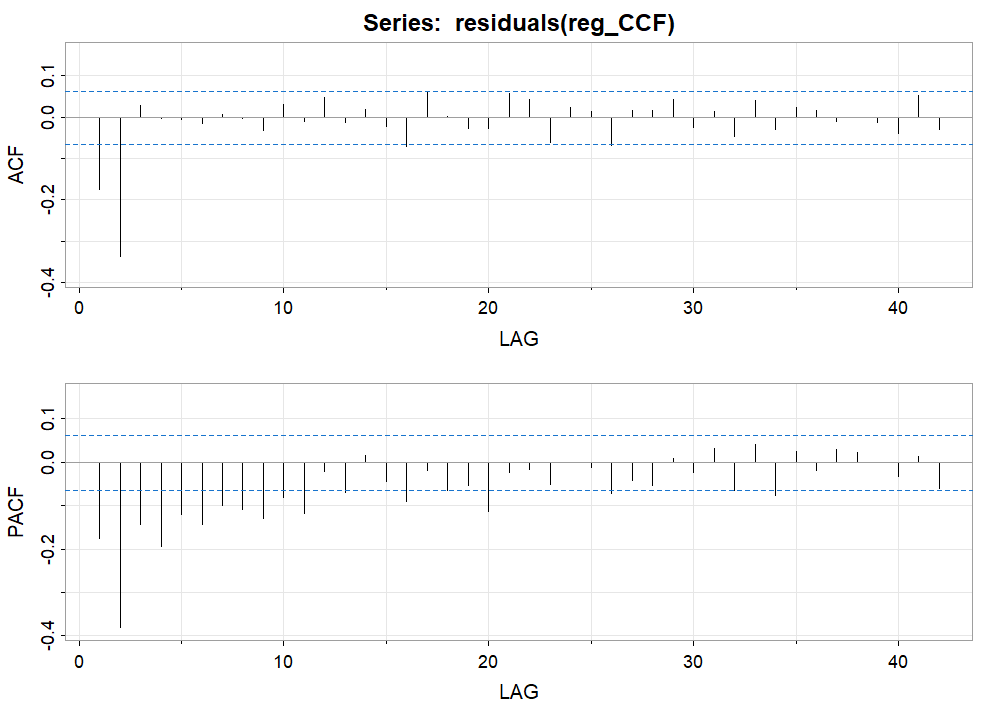
(I) ARIMA & CCF method

CPAP adherence validation:



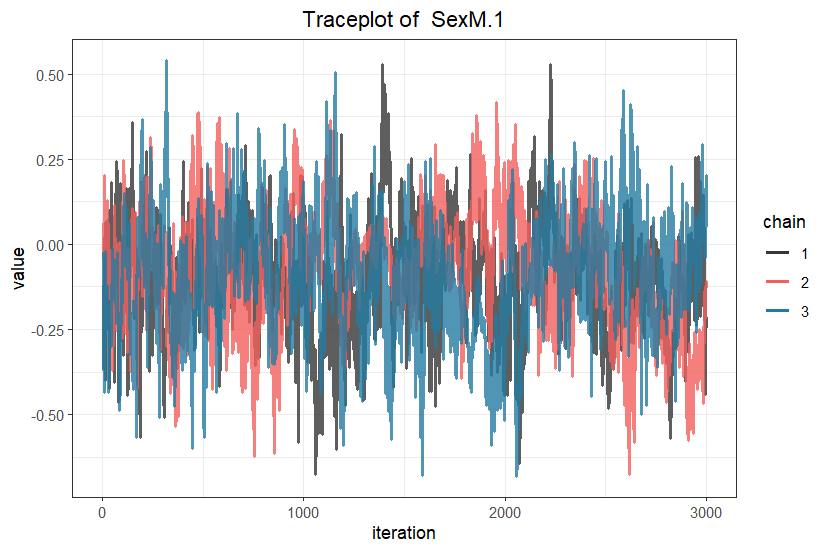
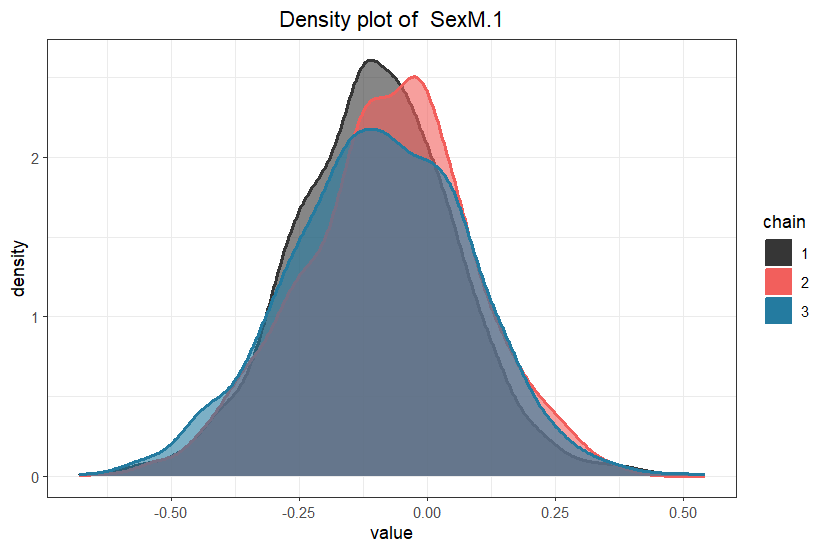
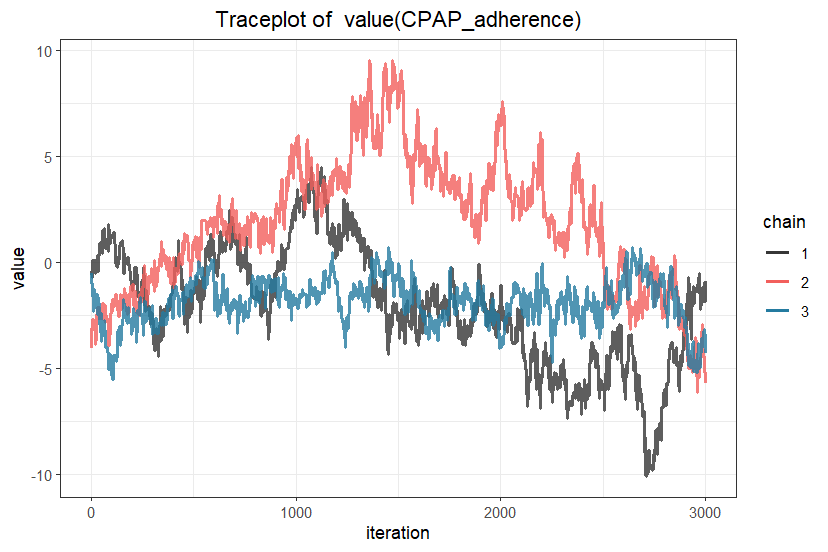
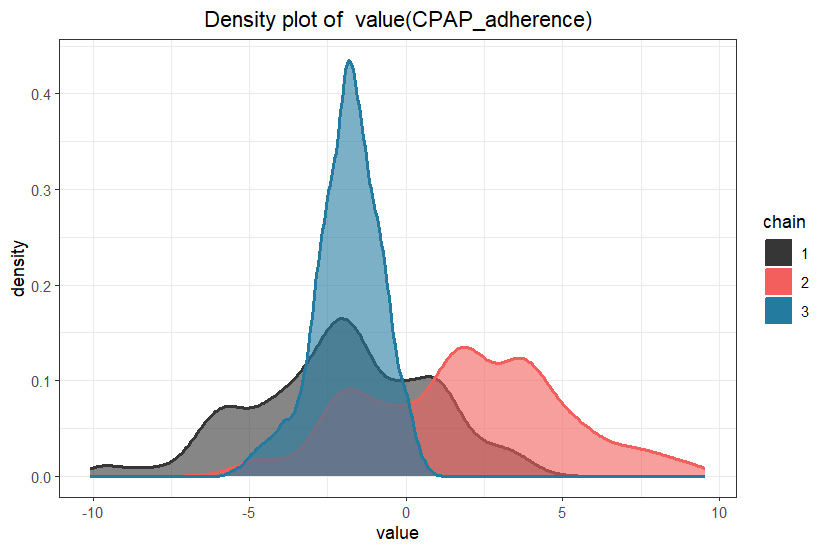


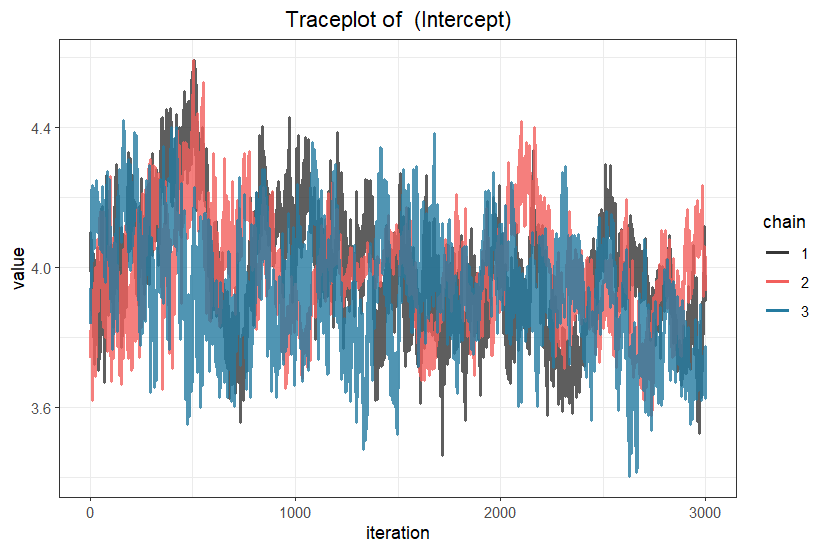
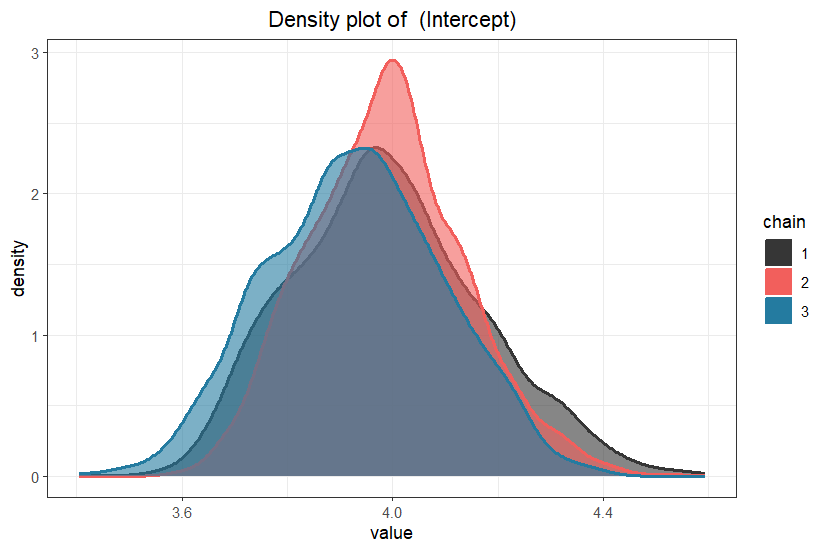
ESS score validation:

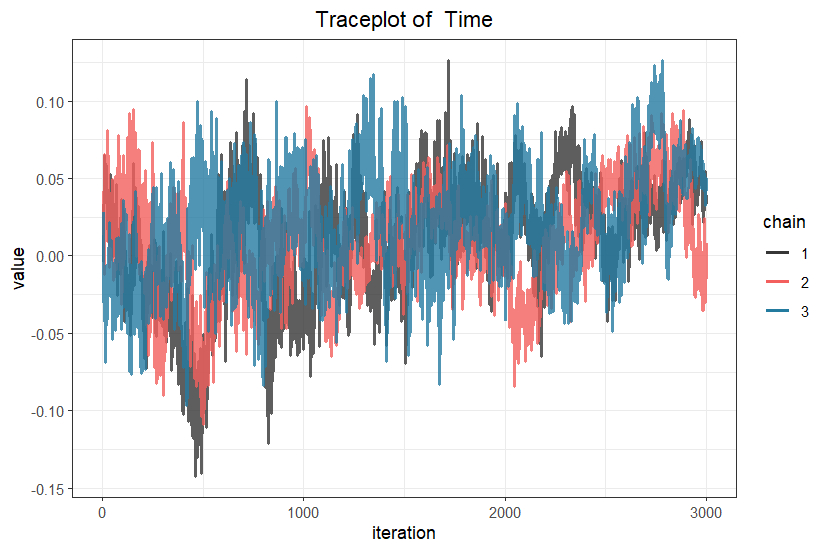


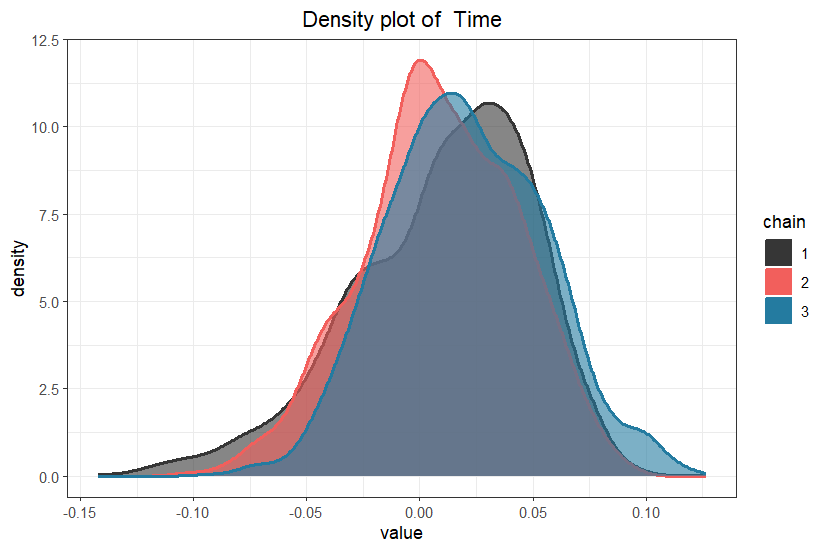
(K) Joint method

Validation of the joint model (density; sampling behavior, mixing across chains and convergence):

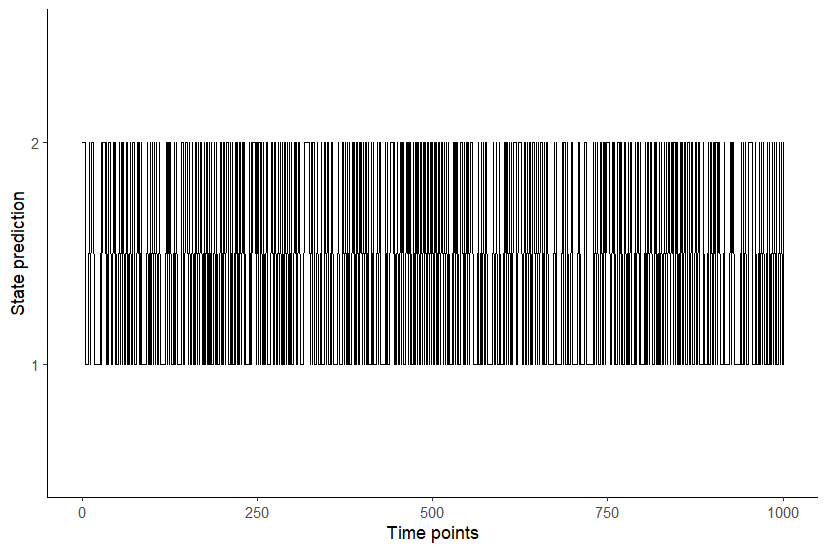




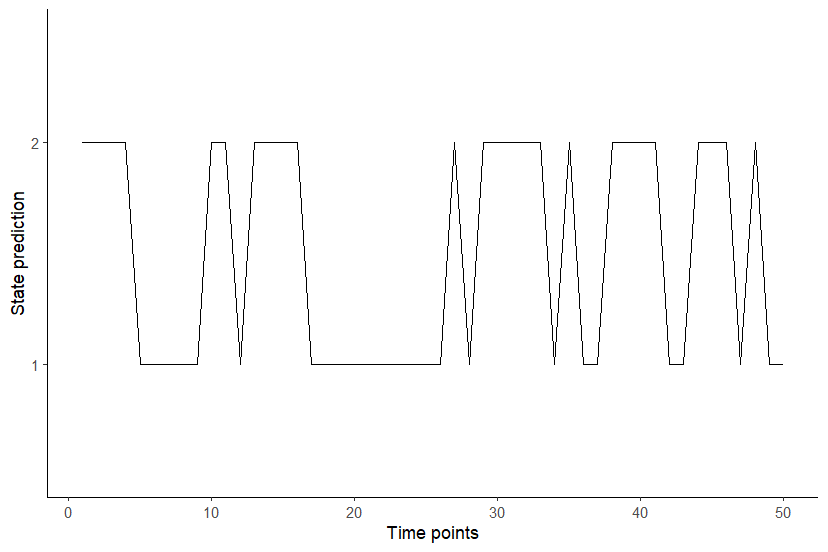




1. Hidden Markov method

State prediction: For all time points

To be more readable, we selected the first 50 time points:



## Tables

(C) LCA method

The item-response probabilities were:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **[0h; 2h[** | **[2h; 4h[** | **≥4h** |
| **T1** | | | |
| Cluster 1 | 0.10 | 0.58 | 0.32 |
| Cluster 2 | 0.04 | 0.30 | 0.67 |
| **T2** | | | |
| Cluster 1 | 0.15 | 0.42 | 0.43 |
| Cluster 2 | 0.13 | 0.29 | 0.57 |
| **T3** | | | |
| Cluster 1 | 0.24 | 4.40e-10 | 0.76 |
| Cluster 2 | 0.05 | 0.57 | 0.38 |
| **T4** | | | |
| Cluster 1 | 0.13 | 0.09 | 0.77 |
| Cluster 2 | 0.05 | 0.64 | 0.31 |
| **T5** | | | |
| Cluster 1 | 0.30 | 6.54e-94 | 0.70 |
| Cluster 2 | 0.05 | 0.54 | 0.41 |

(H) LTA method

The conditional response probabilities:

|  |  |  |
| --- | --- | --- |
| **State** | **1** | **2** |
| **Category** |  |  |
| **[0h;2h[** | 0.03 | 0.22 |
| **[2h;4h[** | 0.33 | 0.59 |
| **≥4h** | 0.63 | 0.19 |