

LATEX-TEMPLATE



PROJECT TITLE

Project Description

TITLE

rédigé par
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15 Mar 2024

Abstract

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contribution

si jamais vous apercevez des fautes dans le polycopié, merci de rédiger une issue sur Github à l'adresse:

correctif



Latex-Template/issues

contact



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Notation	Signification
Category A	
Category B	

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Chapter 2

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2.1

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Chapter 3

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3.1

Appendix A

Some Appendix

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A.1 with subsection	i
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A.1 with subsection

A.2 and another one

Appendix B

Code Examples

B.1 with comments

```
1 # — install — #
2 install.packages(c("fda", "fda.usc"))
3 # — general packages — #
4
5 library(data.table)
6 # — FDA packages — #
7
8 library(fda)
9 library(fda.usc)
```

B.2 Math in code bloc

```
1 # |      date      |  $X_1$  |  $X_2$  | ... |  $X_p$  |
2 # | Jan 1st 12:00 | :   | :   |     | :   |
3 data <- fread("data.csv")
4
5
6 # un individu = une ligne
7 # donc pour une série temporelle, il faut transposer les observations et avoir la suite
8 # ↪ des données disposées sur une ligne.
9 fdata_standard_index <- fda.usc::fdata(
10   mdata = t(X),
11   argvals = to_unit_interval(
12     #           ↑
13     # on doit ramener les dates dans l'intervalle [0,1]
14     data[, .(date)]
15   )
16 )
```

B.3 some generic code

```
1 nb_points <- ncol(fdata)
2 nb_ts <- nrow(fdata)
3
4 fda_optim_basis <- fda.usc::optim.basis(
5   fdataobj = select_representative_observations_for_mean_function_fdata(fdata_ts =
6     ↪ fdata, is_iid = is_iid),
7   type.CV = fda.usc::GCV.S,
8   W = NULL,
9   lambda = lambda_cv_look_list,
10  numbasis = num_basis_seq,
11  type.basis = "bspline",
12  verbose = TRUE
13 )
```

another code block :

```
1 fda_optimal_basis <- ...
2 fdata_obj_temp <- fda_optimal_basis[["fdata.est"]]
3 fdata_obj <- fda.usc::fdata2fd(fdata_obj_temp)
4 fpca_result <- fda::pca.fd(
5   fdobj = fdata_obj,
6   nharm = 3,
7   # centrer les données
8   centerfns = TRUE
9 )
```

B.4 inline block with math

Regardons désormais à quoi ressemble la sortie :

$$\text{fpca_result}\$scores = \downarrow [X_i] \begin{matrix} \xrightarrow{[\phi_k]} \\ \begin{bmatrix} \ddots & \dots & \vdots \\ \vdots & \xi_i^{[k]} = \langle X_i - \mu | \phi_k \rangle & \vdots \\ \dots & \dots & \ddots \end{bmatrix} \end{matrix}$$

Appendix C

Article's Appendix

C.1

C.2

Bibliography

- [1] A. Monfort C. Gouriéroux and A. Trognon. Pseudo maximum likelihood methods: Theory. The Econometric Society, 52(3), 1984. pages 681-700. DOI : <https://doi.org/10.2307/1913471>.