Title

by

First Last

Ph.D. candidate

A Dissertation Presented to the
FACULTY OF THE USC GRADUATE SCHOOL
UNIVERSITY OF SOUTHERN CALIFORNIA
In Partial Fulfillment of the
Requirements for the Degree
DOCTOR OF PHILOSOPHY
(Major)

August 2021

Dedication

Acknowledgements

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Contents

List of Tables

List of Figures

Abstract

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Chapter 1
Introduction

1.1 Background

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

1.2 Outline of the thesis

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Chapter 2
Study I with example figures, tables, and equations

2.1 Introduction

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Publication Details: Zhu, F., Emile-Geay, J., McKay, N. P., Hakim, G. J., Khider, D., Ault, T. R., Steig, E. J., Dee, S., & Kirchner, J. (2019). Climate models can correctly simulate the continuum of global-average temperature variability. Proceedings of the National Academy of Sciences, 201809959. `https://doi.org/10.1073/pnas.1809959116`

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

2.2 Example figures

Figure 2.1 is borrowed from Zhu et al. (2019b).

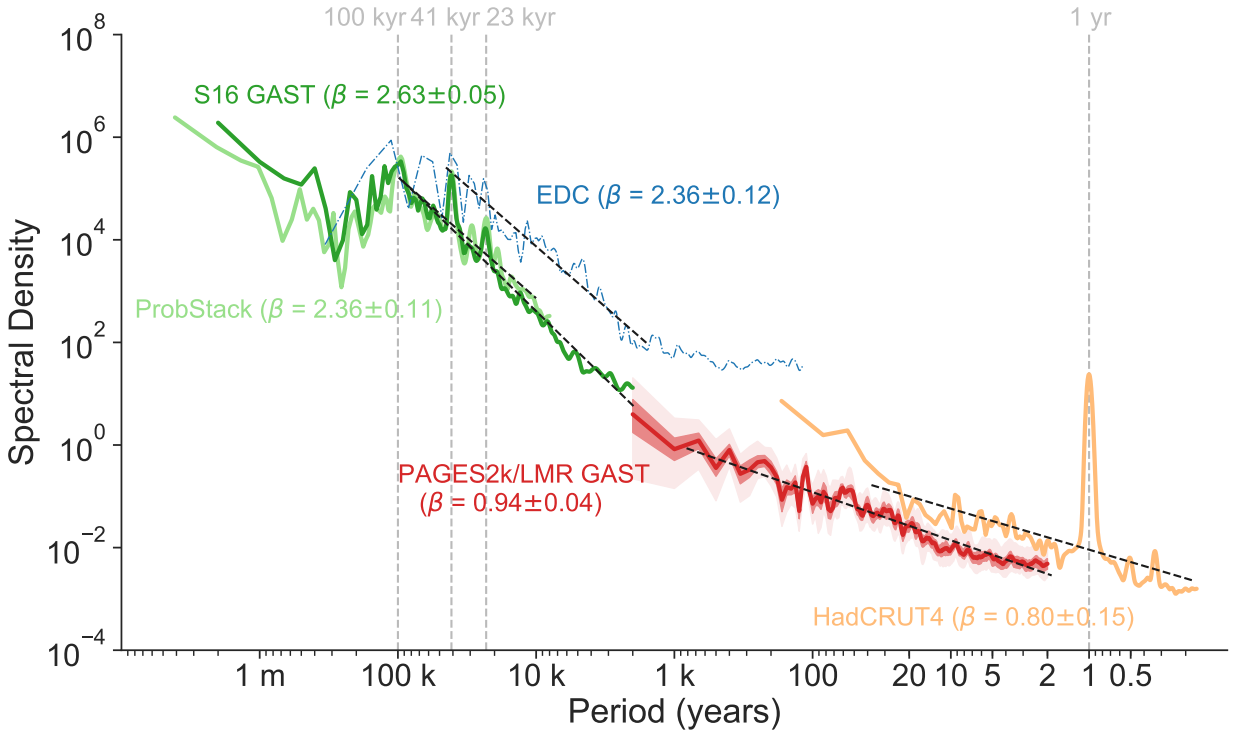

Figure 2.1: Figure borrowed from Zhu et al. (2019b).

2.3 Example tables

Table 2.1 is an example of a simple tabular.

Table 2.1: Caption text.

header-01	header-02	header-03	header-04
column-01	column-02	column-03	column-04

2.4 Example equations

Equation (2.1) shows a matrix.

$$\boldsymbol{S} = \begin{bmatrix} \langle \boldsymbol{\Psi}_0 \mid \boldsymbol{\Psi}_0 \rangle & \langle \boldsymbol{\Psi}_0 \mid \boldsymbol{\Psi}_1 \rangle & \langle \boldsymbol{\Psi}_0 \mid \boldsymbol{\Psi}_2 \rangle \\ \langle \boldsymbol{\Psi}_1 \mid \boldsymbol{\Psi}_0 \rangle & \langle \boldsymbol{\Psi}_1 \mid \boldsymbol{\Psi}_1 \rangle & \langle \boldsymbol{\Psi}_1 \mid \boldsymbol{\Psi}_2 \rangle \\ \langle \boldsymbol{\Psi}_2 \mid \boldsymbol{\Psi}_0 \rangle & \langle \boldsymbol{\Psi}_2 \mid \boldsymbol{\Psi}_1 \rangle & \langle \boldsymbol{\Psi}_2 \mid \boldsymbol{\Psi}_2 \rangle \end{bmatrix} \tag{2.1}$$

2.5 Conclusion

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Chapter 3
Study II with example Python code and citations

3.1 Introduction

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

3.2 Example Python code

Below shows an example of Python code block using `Pyleoclim` (Khider et al., 2018):

```
import pyleoclim as pyleo

url = 'http://wiki.linked.earth/wiki/index.php/Special:WTLiPD?op=export&lipdid=MD982176.Stott.2004'
data = pyleo.Lipd(usr_path=url)
ts_list = data.to_tso()
ts_sst = pyleo.LipdSeries(ts_list)

# OUTPUT BELOW
# extracting paleoData...
# extracting: MD982176.Stott.2004
# Created time series: 6 entries
# 0 :  MD982176.Stott.2004 :  marine sediment :  depth
# 1 :  MD982176.Stott.2004 :  marine sediment :  yrbp
# 2 :  MD982176.Stott.2004 :  marine sediment :  d18og.rub
# 3 :  MD982176.Stott.2004 :  marine sediment :  d18ow-s
# 4 :  MD982176.Stott.2004 :  marine sediment :  mg/ca-g.rub
# 5 :  MD982176.Stott.2004 :  marine sediment :  sst
#
# Enter the number of the variable you wish to use:  5
```

3.3 Example citations

Please check the "references.bib" file to see the details of the different types of citations.

3.3.1 Journal article

Example journal article Zhu et al. (2020).

3.3.2 Book chapter

Example book chapter Emile-Geay et al. (2020).

3.3.3 Software

Example software Zhu et al. (2019a).

3.4 Conclusion

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Chapter 4
Conclusion

4.1 Summary

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

4.2 Caveats and future work

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

4.3 Outlook

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Bibliography

Julien Emile-Geay, Kim M. Cobb, Julia E. Cole, Mary Elliot, and Feng Zhu. “Past ENSO Variability”. In: *El Niño Southern Oscillation in a Changing Climate*. Ed. by Michael J. McPhaden, Agus Santoso, and Wenju Cai. American Geophysical Union (AGU), 2020. Chap. 5, pp. 87–118. ISBN: 9781119548164. DOI: 10.1002/9781119548164.ch5.

Deborah Khider, Feng Zhu, Jun Hu, and Julien Emile-Geay. *LinkedEarth/Pyleoclim_util: Pyleoclim release v0.4.7*. Mar. 2018. DOI: 10.5281/zenodo.1205661.

Feng Zhu, Julien Emile-Geay, Gregory J. Hakim, Jonathan King, and Kevin J. Anchukaitis. “Resolving the Differences in the Simulated and Reconstructed Temperature Response to Volcanism”. en. In: *Geophysical Research Letters* 47.8 (2020). _eprint: https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2019GL086908, e2019GL086908. ISSN: 1944-8007. DOI: 10.1029/2019GL086908.

Feng Zhu, Julien Emile-Geay, Gregory J. Hakim, Robert Tardif, and Andre Perkins. *LMR Turbo (LMRt): a lightweight implementation of the LMR framework*. Version 0.6.3. Dec. 2019. DOI: 10.5281/zenodo.3590258.

Feng Zhu, Julien Emile-Geay, Nicholas P. McKay, Gregory J. Hakim, Deborah Khider, Toby R. Ault, Eric J. Steig, Sylvia Dee, and James W. Kirchner. “Climate models can correctly simulate the continuum of global-average temperature variability”. en. In: *Proceedings of the National Academy of Sciences* (Apr. 2019), p. 201809959. ISSN: 0027-8424, 1091-6490. DOI: 10.1073/pnas.1809959116.