

Tidying Spatial Data for Agriculture Usage Purposes

Johanie Fournier, agr.

2024-01-05

Table of contents

Preface	3
1 Introduction	4
2 Spatial Data Handling	5
3 Spatial Data Preprocessing	6
4 Spatial Data Visualisation	7
5 Spatial Data Exploratory Data Analysis	8
6 Spatial Data Autocorrelation	9
7 Spatial Data Interpolation	10
8 Spatial Data Modeling	11
9 Spatial Data Simulation	12
10 Spatial Data Uncertainty	13
11 Spatial Data Change Detection	14
12 Spatial Data Risk Assessment	15
13 Spatial Data Simulation Methods	16
References	17

Preface

This is a Quarto book.

To learn more about Quarto books visit <https://quarto.org/docs/books>.

1 + 1

[1] 2

1 Introduction

This is a book created from markdown and executable code.

See Knuth (1984) for additional discussion of literate programming.

```
1 + 1
```

```
[1] 2
```

2 Spatial Data Handling

2.0.0.1 Outline Data Quality

- What are common issues related to spatial data quality?
- How can one address errors and inaccuracies in spatial datasets?
- What role does data quality play in geostatistical analysis?

3 Spatial Data Preprocessing

In summary, this book has no content whatsoever.

1 + 1

[1] 2

4 Spatial Data Visualisation

In summary, this book has no content whatsoever.

1 + 1

[1] 2

5 Spatial Data Exploratory Data Analysis

In summary, this book has no content whatsoever.

1 + 1

[1] 2

6 Spatial Data Autocorrelation

6.0.0.1 Outline

- What is spatial autocorrelation?
- Why is it important?
- How can you measure spatial autocorrelation in geostatistics?
- What are the implications of spatial autocorrelation in environmental data?

7 Spatial Data Interpolation

7.0.0.1 Outline

- How does spatial interpolation work?
- What are common methods for spatial interpolation?
- Can you explain inverse distance weighting in spatial interpolation?

8 Spatial Data Modeling

8.0.0.1 Outline

- What is the role of geostatistical models in environmental applications?
- How do you validate geostatistical model?
- Can you provide examples of geostatistical modeling in practice?

9 Spatial Data Simulation

9.0.0.1 Outline

- What are spatial simulation methods and when are they used?
- How does Monte Carlo simulation apply to geostatistical modeling?
- Can you provide examples of spatial simulations in environmental science?

10 Spatial Data Uncertainty

10.0.0.1 Outline

- How is uncertainty addressed in geostatistical predictions?
- What are common methods for quantifying uncertainty in spatial models?
- How does uncertainty impact decision-making in environmental management?

11 Spatial Data Change Detection

11.0.0.1 Outline

- How can geostatistics be applied to detect changes in environmental variables?
- What are the challenges in change detection using geostatistical methods?
- Can you provide examples of successful change detection studies?

12 Spatial Data Risk Assessment

12.0.0.1 Outline

- How does geostatistics contribute to environmental risk assessment?
- What factors are considered in assessing environmental risks spatially?
- What is the role of geostatistics in risk management strategies?

13 Spatial Data Simulation Methods

13.0.0.1 Outline

- What are spatial simulation methods and when are they used?
- How does Monte Carlo simulation apply to geostatistics modeling?
- Can you provide examples of spatial simulations in environmental science?

References

Knuth, Donald E. 1984. “Literate Programming.” *Comput. J.* 27 (2): 97–111. <https://doi.org/10.1093/comjnl/27.2.97>.