

*Model-based geostatistics
for global public health
using R*

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Preface

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```
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
```

1.1 Why this book

1.2 R packages used in this book

1.3 Examples

1.4 Workflow of a statistical analysis



2

Exploratory analysis

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

```
1 + 1
```

```
[1] 2
```

2.1 Importing and processing spatial data in R

2.2 Visualizing geostatistical data

2.3 Exploring associations

2.4 Analysis of the residuals

2.4.1 Diagnostics for overdispersion

2.4.2 Diagnostics for residual spatial variation



3

Model fitting

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

```
1 + 1
```

```
[1] 2
```

3.1 Linear Gaussian model

3.2 Generalized linear geostatistical models



4

Model validation

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

```
1 + 1
```

```
[1] 2
```

4.1 How to simulate geostatistical data from a fitted model

4.2 Validating the calibration of the model

4.3 Validating the spatial correlation of the model



5

Geostatistical prediction

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

```
1 + 1
```

```
[1] 2
```

5.1 Pixel-level predictive targets

5.2 Area-level predictive targets

5.3 Comparing the predictive performance of geostatistical models



6

Case studies

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

```
1 + 1
```

```
[1] 2
```

6.1 Mapping stunting risk in Ghan

6.2 Mapping river blindness in Malawi

6.3 Mapping mosquitoes abundance in Cameroon



References

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