**Recent publication: Spatio-Temporal Statistics with R**

Wikle, C. K., Zammit-Mangion, A., & Cressie, N. (2019). *Spatio-Temporal Statistics with R*. CRC Press.

Free PDF available: [https://spacetimewithr.org](https://spacetimewithr.org/Spatio-Temporal%20Statistics%20with%20R.pdf)

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Alongside the omnipresent aspect of space in pedometrics research, time-structured data are gaining ground. This new book offers a timely hands-on introduction based on the previously published and more advanced “Statistics for Spatio-Temporal Data” (Wikle and Cressie, 2011; Wiley). Each chapter closes with R labs including easy-to-implement examples. The focus on direct application is underlined by “R tips” boxes containing the R packages and functions needed to apply the methods covered in each section and by the inclusion of the “STRbook” R package along with the book. This R package has not, however, been uploaded to CRAN (most likely due to data limitations of the repository) and hence has not undergone CRAN's formal checks. Help pages for some functions and descriptions of the provided datasets are unfortunately missing from the package.

The authors take a classical approach to spatio-temporal data analysis. This is reflected in the table of contents; the book starts with descriptive visualization of data, continues by applying parametric descriptive and dynamic models, and then evaluates these. Finally, a resampling approach is elaborated in the appendices. The content is mainly rooted in the hierarchical approach, which makes a clear distinction between the data and the underlying latent process of interest. Besides classical linear statistics, generalized linear and generalized additive models are also briefly touched upon.

Statistical learning approaches for space-time data remain vague, being mentioned only in passing. Moreover, model selection is only very briefly discussed, despite its being a recurrent problem for most modelers nowadays, in view of the ever-increasing quantities of input data. Also absent are robust model-parameter estimation and other methods beyond the classical Gaussian framework.

That said, scoring rules to evaluate probability predictions – often neglected in pedometrics – are outlined properly. R code is mostly up-to-date. Examples are based on the latest R features, such as “tidyverse” syntax and data types, although the authors stick to the “sp” package and have not adopted the new representation of spatial classes in the “sf” package.

In summary, this book provides a very neat introduction to classical space-time data analysis for R modelers. The presence of a freely available PDF version, step-by-step tutorials, “Technical Notes” providing a brief statistical background, and even a matrix algebra refresher in the appendices also make the book a suitable basis for teaching. However, pedometrics readers should keep in mind that approaches exist beyond the ones presented here, which were not included by the authors “because of space and time limitations” (p. 304).