

## Reference List for the Course “Time Series Analysis”, Fall Semester 2022

The course is based to some extent on the book

- Shumway, R. H. and Stoffer, D. S. (2006). Time Series Analysis and its Applications: with R examples. Springer.

The book is available free as pdf via eth-library: [www.library.ethz.ch](http://www.library.ethz.ch) (search for example for “shumway time” and then use the version of the book with “online resource”).

Most of the material is standard and can be found in most books on time series analysis. The area of time series analysis is huge, and the below is just a selection of topics and detail of presentation.

I will post a script (continuously updated) with the notes on the first part of the course after a few weeks.

For state space models and Hidden Markov models we will also use the overview chapter written by Hans-Ruedi Künsch, which will be posted later.

### Introductory books

- Brockwell, P.J. and Davis, R.A. (2002). Introduction to Time Series and Forecasting (2nd edition). Springer.
- Chatfield, C. (2004): The Analysis of Time Series: An Introduction (6th Edition). Chapman and Hall.
- Diggle, P.J. (1990). Time Series. A Biostatistical Introduction. Oxford University Press.

### Books on a similar level as the course

- Fuller, W.A. (1996). Introduction to Statistical Time Series (2nd edition). Wiley.
- Hamilton, J.D. (1994). Time Series Analysis. Princeton University Press.
- Priestley, M.B. (1981). Spectral Analysis and Time Series. (Vol. 1: Univariate Series & Vol. 2 Multivariate Series, Prediction and Control). Academic Press.

## Books with emphasis on special topics

- Olivier Cappe, Eric Moulines, Tobias Ryden (2006): Inference in Hidden Markov Models. Springer.
- Durbin, J. and Koopman, S.J. (2012): Time Series Analysis by State Space Methods. Oxford University Press.
- Box, G.E., Jenkins, G.M. and Reinsel, G. C. (2008). Time Series: Forecasting and Control (4th edition). Prentice Hall.  
New edition of the classic 1970 book by the first 2 authors which made ARIMA modeling popular.
- Percival, D. B. and Walden, A. T. (1993). Spectral Analysis for Physical Applications: Multitaper and Conventional Univariate Techniques. Cambridge University Press.
- Percival, D. B. and Walden, A. T. (2000). Wavelet Methods for Time Series Analysis. Cambridge University Press.
- Prado, R. and West, M. (2010). Time Series, Modeling, Computation and Inference. Chapman and Hall.  
Presents Bayesian methods.
- Tong, H. (1993). Non-linear Time Series: A Dynamical System Approach. Oxford University Press.
- Tsay, R. S. (2010). Analysis of Financial Time Series (3rd edition). Wiley.
- Hyvärinen, A., Karhunen, J. and Oja, E. (2001): Independent Component Analysis. Wiley.