Wavelet Methods for Time Series Analysis

Half-Day Workshop Presented at UNSW

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Overview of Workshop

- two sessions, each 1 hour and 45 minutes long
  - I: introduction to wavelets and wavelet transforms
  - II: wavelet-based statistical analysis of time series
    - wavelet variance (also known as wavelet spectrum)
    - wavelet-based signal extraction
    - wavelet-based decorrelation of time series
- R code demonstrating ideas from both sessions available at

  `http://faculty.washington.edu/dbp/talks`

Resources

- overheads for workshop based partially on *Wavelet Methods for Time Series Analysis*, D. B. Percival and A. T. Walden, Cambridge University Press, Cambridge, UK, 2000 (softcover edition with corrections issued in 2006; translation into Chinese (available from China Machine Press) issued in 2006); when applicable, lower left-hand corner of overheads indicate relevant pages in WMTSA
- software in R (available from `http://cran.r-project.org/` except for latest version of `wavethresh`, which is available from `http://www.stats.bris.ac.uk/~wavethresh`)

  `wavelets` (*)

  `waveslim` (*)

  `wavethresh` (†)

  `wmtsa` (*)
- software in Matlab:

  `WaveCov`: `http://www2.imperial.ac.uk/~bwhitche/software/` (*)

  `wavelab`: `http://www-stat.stanford.edu/~wavelab/`

  `WMTSA`: `http://www.atmos.washington.edu/~wmtsa` (*)

(*) indicates software compatible with conventions used in overheads and WMTSA book

(†) G. P. Nason, *Wavelet Methods in Statistics with R*, Springer, Berlin, 2008