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List of Publications

Publications in refereed journals and publications accepted in journals

- 1) Dahlhaus, R. (1983). Spectral analysis with tapered data. *J. Time Ser. Anal.* 4, 163 - 175.
- 2) Dahlhaus, R. (1985). Asymptotic normality of spectral estimates. *J. Multivariate Anal.* 16, 412 - 431.
- 3) Dahlhaus, R. (1985). A functional limit theorem for tapered empirical spectral functions. *Stoch. Proc. Appl.* 19, 135 - 149.
- 4) Dahlhaus, R. (1985). On a spectral density estimate obtained by averaging periodograms. *J. Appl. Prob.* 22, 598 - 610.
- 5) Dahlhaus, R. (1985). On the asymptotic distribution of Bartlett's U_p -statistic. *J. Time Ser. Anal.* 6, 213 - 227.
- 6) Dahlhaus, R. (1987). Nonparametric spectral analysis with missing observations. *Sankhya A* 49, 347 - 367.
- 7) Dahlhaus, R. and Künsch, H. (1987). Edge effects and efficient parameter estimation for stationary random fields. *Biometrika* 74, 877-882.
- 8) Dahlhaus, R. (1988). Small sample effects in time series analysis: A new asymptotic theory and a new estimate. *Ann. Statist.* 16, 808 - 841.
- 9) Dahlhaus, R. (1988). Empirical spectral processes and their applications to time series analysis. *Stoch. Proc. Appl.* 30, 69-83.
- 10) Dahlhaus, R. (1989). Pointwise approximation by algebraic polynomials. *J. Approx. Theory* 57, 274- 277.
- 11) Dahlhaus, R. and Pötscher, B.M. (1989). Convergence results for maximum likelihood type estimators in multivariable ARMA models II. *J. Multiv. Anal.* 30, 241-244.

- 12) Dahlhaus, R. (1989). Efficient parameter estimation for self similar processes. *Ann. Statist.* 17, 1749-1766. Correction note: *Ann. Statist.* 34, 1045-1047 (2006).
- 13) Dahlhaus, R. (1990). Approximations for the inverse of Toeplitz matrices with applications for stationary processes. *Lin. Alg. Applic.* 127, 27-40.
- 14) Dahlhaus, R. (1990). Nonparametric high resolution spectral estimation. *Probab. Theory Rel. Fields* 85, 147-180.
- 15) Dahlhaus, R. (1995). Efficient location and regression estimation for long range dependent regression models. *Ann. Statist.* 23, 1029-1047.
- 16) Dahlhaus, R. (1996). On the Kullback-Leibler information divergence of locally stationary processes. *Stoch. Proc. Appl* 62, 139-168.
- 17) Dahlhaus, R. (1996b). Maximum likelihood estimation and model selection for locally stationary processes. *J. Nonparam. Statist.* 6, 171-191.
- 18) Dahlhaus, R. and Wefelmeyer, W. (1996). Asymptotically optimal estimation in misspecified time series models. *Ann. Statist.* 24, 952-974.
- 19) Dahlhaus, R. and Janas, D. (1996). A frequency domain bootstrap for ratio statistics in time series analysis. *Ann. Statist.* 24, 1934-1963.
- 20) Dahlhaus, R. (1997). Fitting time series models to nonstationary processes. *Ann. Statist.* 25, 1-37.
- 21) Dahlhaus, R., Eichler M. and Sandkühler, J. (1997). Identification of synaptic connections in neural ensembles by graphical models. *J. Neuroscience Methods* 77, 93-107.
- 22) Dahlhaus, R. and Giraitis, L. (1998). On the optimal segment length for parameter estimates for locally stationary time series. *J. Time Ser. Anal.* 19, 629-656.
- 23) Dahlhaus, R., Neumann, M. H. and von Sachs, R. (1999). Nonlinear wavelet estimation of time-varying autoregressive processes. *Bernoulli* 5, 873-906.
- 24) Dahlhaus, R. (2000). A likelihood approximation for locally stationary processes. *Ann. Statist.* 28, 1762-1794.
- 25) Dahlhaus, R. (2000). Graphical interaction models for multivariate time series. *Metrika* 51, 157-172.
- 26) Chen, Z.G., Wu, K.H. and Dahlhaus, R. (2000). Hidden frequency estimation with data tapers. *J. Time Ser. Anal.* 21, 113-142.

- 27) Dahlhaus, R. and Neumann, M. H. (2001). Locally adaptive fitting of semiparametric models to nonstationary time series. *Stoch. Proc. Appl.*, 91, 277-308.
- 28) Dahlhaus, R. and Sahm, M. (2001). Local likelihood methods for nonstationary time series and random fields. *Resenhas Journal*, 4, 457-477.
- 29) Eichler, M., Dahlhaus, R., and Sandkühler, J. (2003). Partial correlation analysis for the identification of synaptic connections. *Biological Cybernetics* 89, 289-302.
- 30) Brockwell, P.J. and Dahlhaus, R. (2004). Generalized Levinson-Durbin and Burg algorithms. *Journal of Econometrics* 118, 129-149.
- 31) Feiler S., Müller K., Müller A., Dahlhaus, R. and Eich, W. (2005). Using interaction graphs for analyzing the therapy process. *Psychotherapy and Psychosomatics* 74, 93-99.
- 32) Brockwell, P.J., Dahlhaus, R. and Trindade, A.A. (2005). Modified Burg algorithms for multivariate subset autoregression. *Stat. Sinica* 15, 197-213.
- 33) Schelter, B., Winterhalder, M., Eichler, M., Peifer, M., Hellwig, B., Guschlbauer, B., Lücking, C.H., Dahlhaus, R., Timmer, J. (2006). Testing for directed influences among neural signals using partial directed coherence. *Journal of Neuroscience Methods* 152, 210-219.
- 34) Dahlhaus, R. and Subba Rao, S. (2006). Statistical inference for locally stationary ARCH models. *Ann. Statist.* 34, 1075-1114.
- 35) Schelter, B., Winterhalder, M., Dahlhaus, R., Kurths, J. and Timmer, J. (2006). Partial phase synchronization for multivariate synchronizing systems. *Phys. Rev. Lett.* 96, 208103.
- 36) Van Bellegem, S. and Dahlhaus, R. (2006). Semiparametric estimation by model selection for locally stationary processes. *Journal Roy. Statist. Soc. B* 68, 721-764.
- 37) Dahlhaus, R. and Polonik, W. (2006). Nonparametric quasi maximum likelihood estimation for Gaussian locally stationary processes. *Ann. Statist.* 34, 2790-2824.
- 38) Dahlhaus R. and Subba Rao S. (2007). A recursive online algorithm for the estimation of time-varying ARCH parameters. *Bernoulli* 13, 389-422.
- 39) Dahlhaus, R. and Polonik, W. (2009). Empirical spectral processes for locally stationary time series. *Bernoulli*, 15, 139.
- 40) Dahlhaus, R. (2009). Local inference for locally stationary time series based on the empirical spectral measure. *Journal of Econometrics* 151, 101-112.

Preprints

- 41) Dahlhaus, R. and Hainz, G. (1998). Spectral Domain Bootstrap Tests for Stationary Time Series. Preprint. Universität Heidelberg.
- 42) Dahlhaus, R. and Hainz, G. (1998). Model Selection for time series by bootstrap-methods. Preprint. Universität Heidelberg.
- 43) Dahlhaus, R. and Subba Rao, S. (2003). Recursive least squares estimation for time varying autoregressive processes. Preprint. Universität Heidelberg.
- 44) Dahlhaus, R. and Neddermeyer, J.C. (2009). Bayesian phase estimation for noisy quasi- periodic time series. Preprint. Universität Heidelberg.
- 45) Dahlhaus, R. and Neddermeyer, J.C. (2010a). Particle filter-based on-line estimation of spot volatility with nonlinear market microstructure noise models. Preprint. Universität Heidelberg.
- 46) Dahlhaus, R. and Neddermeyer, J.C. (2010b). On-line estimation of spot cross-volatility with a state-space model for non-synchronous tick-by-tick data. Preprint. Universität Heidelberg.

Monographs, Lecture notes

- 47) Dahlhaus, R. (1997). *The Analysis of Nonstationary Time Series and Curve Estimation with Locally Stationary Models*. Lecture Notes. Academia Sinica, Taiwan.
- 48) Dahlhaus, R., Kurths, J., Maas, P. and Timmer, J. (Ed.) (2008). *Mathematical Methods in Time Series Analysis and Digital Image Processing*. Springer Verlag, Berlin Heidelberg.

Thesis

- 49) Dahlhaus, R. (1978). *Die Schätzung der Spektralfunktion bei mehrdimensionalen stationären Prozessen*. Diploma Thesis, Universität Münster, Germany.
- 50) Dahlhaus, R. (1982). *Schwache Konvergenz bei einer Klasse von Spektralschätzern*. Doctoral Thesis, Universität Essen, Germany.
- 51) Dahlhaus, R. (1986). *Data Tapers in Time Series Analysis*. Habilitationsschrift, Universität Essen, Germany.

Contributions in books

- 52) Dahlhaus, R. (1984). Parameter estimating of stationary processes with spectra containing strong peaks. In: Robust and Nonlinear Time Series Analysis (Ed. J. Franke et al.), Lecture Notes in Statistics, 26, Springer Verlag, New York, 50 - 67.
- 53) Dahlhaus, R. (1996). Asymptotic statistical inference for nonstationary processes with evolutionary spectra. In: P.M. Robinson und M. Rosenblatt (edt.) *Athens Conference on Applied Probability and Time Series Analysis, Volume II*, 145-159. Springer Verlag, New York.
- 54) Dahlhaus, R. and Polonik, W. (2002). Empirical spectral processes and nonparametric maximum likelihood estimation for time series. In: H. Dehling, Th. Mikosch and M. Sorensen (edt.), *Empirical Process Techniques for Dependent Data*, 275-298. Birkhäuser, Boston.
- 55) Dahlhaus R. and Eichler, M. (2003). Causality and graphical models for time series. In: P. Green, N. Hjort, and S. Richardson (eds.), *Highly structured stochastic systems*, 115-137. University Press, Oxford.
- 56) Dahlhaus R. (2003). Curve estimation for locally stationary time series models. In: M. Akritas and D.N. Politis (eds.), *Recent Advances and Trends in Nonparametric Statistics*, 451-466. Elsevier, Amsterdam.
- 57) Franke J., Dahlhaus R., Polzehl J., Spokoiny V., Steidl G., Weickert J., Berdychevski A., Didas S., Halim S., Mrázek P., Rao S.S., Tadjuidje J. (2008). Structural adaptive smoothing procedures, in: *Mathematical Methods in Time Series Analysis and Digital Image Processing*, R. DAHLHAUS, J. KURTHS, P. MAASS, J. TIMMER, eds., Understanding Complex Systems, Springer, Berlin, Heidelberg, 2008, 183–229.

Short contributions

- 58) Dahlhaus, R. (1987). Discussion of “Rational transfer function approximation” (by E.J. Hannan). *Statistical Science* 2, 154-156.
- 59) Dahlhaus, R., Blettner, M. and Wahrendorf, J. (1990). Letter to the editor on ”Infant mortality after Chernobyl” (by Lüning et.al.). *The Lancet* 335, 161.

Publications in Conference Proceedings

- 60) Dahlhaus, R. (1987). Limitations of self similar processes in data analysis. *Proc. 46th Session of the ISI, Tokyo*.

- 61) Janas, D. and Dahlhaus, R. (1994). A frequency domain bootstrap for time series. *Proceedings on the Interface*.
- 62) Dahlhaus, R. and Eichler, M. (2001). Time series chain graphs and Granger causality. *Proceedings of the ISI*.
- 63) Dahlhaus, R. and Eichler, M. (2002). Causality and graphical models for multivariate time series and point processes. *IFMBE Proc 2002* 3(2), 1430-1431.
- 64) Feiler S., Müller A., Müller K., Bieber C., Hartmann M., Eichler M., Dahlhaus R., Eich W. (2002). Interaktionsgraphen als Methode zur Identifikation von Wirkzusammenhängen im Fibromyalgietherapieprozess. *Psychotherapie, Psychosomatik, Medizinische Psychologie* 52, 86.
- 65) Müller K., Müller A., Feiler S., Bieber C., Hartmann M., Dahlhaus R., Eich W. (2002). Der Zusammenhang zwischen Selbstwirksamkeit und Schmerzintensität, Schlafqualität, Ängstlichkeit und Depressivität im zeitlichen Verlauf während des Therapieprozesses bei Patienten mit Fibromyalgie. *Psychotherapie, Psychosomatik, Medizinische Psychologie* 52, 107.
- 66) Müller, K., Müller, A., Feiler, S., Hotz, T., Dahlhaus, R., und Eich, W. (2002). Therapie-Prozessforschung bei Patientinnen mit Fibromyalgie-Syndrom: Zeitreihenanalytische Auswertung elektronischer Schmerztagebücher. In E. van der Meer, H. Hagedorf, R. Beyer, F. Krüger, A. Nuthmann, und S. Schulz (Eds.). *43. Kongress der Deutschen Gesellschaft für Psychologie in Berlin, 22.-26.9.2002*, 123-124. Lengerich: Pabst Science.
- 67) Dahlhaus, R. and Subba Rao, S. (2003). Curve estimation for time varying ARCH models. *Proceedings of the ISI 2003*.
- 68) Dahlhaus, R. and Polonik, W. (2005). Empirical process techniques for locally stationary processes. *Oberwolfach Reports 2005*, 2633.
- 69) Dahlhaus, R. and Polonik, W. (2007). Empirical process techniques for locally stationary processes. *Proceedings of the ISI 2007*.
- 70) Dahlhaus, R. (2008). Statistical inference for locally stationary processes. *Oberwolfach Reports 2008*, 570.