# A Bibliography of Publications about Matched Field Processing

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## Abstract

This bibliography records publications about matched field processing.

## Title word cross-reference

# References

**Allen:1979:IME**

[AB79] J. B. Allen and D. A. Berkley. Image method for efficiently simulating small-room acoustics. *J. Acoust. Soc. Am.*, 65(4):943–950, April 1979.

**Abraham:1992:ASS**

[Abr92] D. Abraham. An analytical study of source localization in shallow water by matched–field processing of horizontal arrays. SACLANTCEN Memorandum SM-255, La Spezia, August 1992.

**Rendas:1991:CRB**

[aDRM91] M. Jo ao D. Rendas and José M. F. Moura. Cramér-rao bound for location systems in multipath environments. *IEEE Trans. Signal Processing*, 39(12):2593–2610, December 1991.

**Rendas:1992:ASM**

[aDRM92] M. Jo ao D. Rendas and José M. F. Moura. Ambiguity structure of multipath channels. In *Proc. IEEE ICASSP*, pages 509–512. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992.

**Bauer:1859:xxx**

[Bau59] Bauer. *Journal für Mathematik*, LVI:104–106, 1859.

**Bachmann:1976:CRA**

[Bd76] W. Bachmann and B. de Raigniac. Calculations of the reverberation and average intensity of broadband acoustic signals in the ocean by means of the RAIBAC computer model. *J. Acoust. Soc. Am.*, 59:31–38, 1976.

**Burg:1985:HMF**

[BHW85] Burg, Haf, and Wille. *Höhere Mathematik für Ingenieure*. Teubner-Verlag, Stuttgart, Germany, 1985?

**Boehme:1988:LSM**

[BK88] J. F. Böhme and D. Kraus. On least squares methods for direction of arrival estimation in the presence of unknown noise fields. In *Proc. IEEE ICASSP*, pages 2833–2836. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, April 11-14 1988.

**Boehme:1991:PMS**

[BK91] J. F. Böhme and D. Kraus. Parametric methods for source location estimation. In $9^{th}$ *IFAC/IFORS Symp. on Identification and System Parameter Estimation*. Budapest, 1991.

**Baggeroer:1993:MFP**

[BK93] A. B. Baggeroer and W. A. Kuperman. Matched field processing in ocean acoustics. In I. M. G.

Lourtie and J. M. F. Moura, editors, *Acoustic Signal Processing for Ocean Exploration,NATO ASI Series C, vol. 388*, pages 79–114. Kluwer Academic Publisher, Norwell, MA, USA, and Dordrecht, The Netherlands, 1993.

**Baggeroer:1988:MFP**

[BKS88] A. B. Baggeroer, W. A. Kuperman, and H. Schmidt. Matched field processing: Source localization in correlated noise as an optimum estimation problem. *J. Acoust. Soc. Am.*, 83(2):571–587, February 1988.

**Boehme:1994:MWS**

[BM94] J. F. Böhme and D. Maiwald. Multiple wideband signal detection and tracking from towed array data. In M. Blanke and T. Söderström, editors, *SYSID 94, 10th IFAC Symposium on System Identification*, volume 1, pages 107–112. Danish Automation Soc., Copenhagen, July 4-6 1994.

**Boehme:1983:SNM**

[Böh83] J. F. Böhme. Spektralanalyse, Nichtparametrische Methoden. Kurzfassung einer Vorlesung der Fachrichtung Elektrotechnik an der Ruhr-Universität Bochum, July 1983. bearbeitet von R. Knötsch.

**Boehme:1989:PMS**

[Böh89a] J. F. Böhme. Parametrische methoden zur boehme:1989:SSK und systemidentifikation, kurzfassung einer vorlesung der fachrichtung elektrotechnik an der ruhr-universität bochum, 1989. bearbeitet von A. Zoubir.

**Boehme:1989:SSK**

[Böh89b] J. F. Böhme. Spektralanalyse und Systemidentifikation, Kurzfassung einer Vorlesung der Fachrichtung Elektrotechnik an der Ruhr-Universität Bochum, 1989.

**Boehme:1991:AP**

[Böh91] J. F. Böhme. Array processing. In S. Haykin, editor, *Advances in Spectrum Analysis and Array Processing*, pages 1–63. Prentice-Hall, Englewood Cliffs, NJ 07632, USA, 1991.

**Boehme:1993:SS**

[Böh93] J. F. Böhme. *Stochastische Signale.* Teubner-Verlag, Stuttgart, Germany, 1993.

**Boehme:1995:RSA**

[Böh95a] J. F. Böhme. Retrieving signals from array data. In E. S. Husebye, editor, *Selected papers from NATO ASI on Monitoring a Comprehensive Test Ban Treaty*, pages 1–24. Kluwer Academic Publisher, Norwell, MA, USA, and Dordrecht, The Netherlands, January 23 – February 2 1995.

**Boehme:1995:SAS**

[Böh95b] J. F. Böhme. Statistical array signal processing of measured sonar and seismic data. In *Proc. SPIE 2563 Advanced Signal Processing Algorithms*, page (to appear). San Diego, July 1995.

**Bell:1993:CTS**

[BPW93] B. Bell, D. B. Percival, and A. T. Walden. Calculating Thomson's spectral multitapers by inverse iteration. *J. Comput. and Graph. Stat.*, 1993.

**Boender:1995:SM**

[BR95] C. G. E. Boender and H. E. Romeijn. Stochastic methods. In R. Horst and P. M. Pardalos, editors, *Global Optimization*, volume 2 of *Nonconvex Optimization and Its Applications*, pages 829–869. Kluwer Academic Publisher, Norwell, MA, USA, and Dordrecht, The Netherlands, 1 edition, 1995. ISBN 0-7923-3120-6, Bibl: M3 Hor 95 70.

**Brekhovskikh:1960:WLM**

[Bre60] L. M. Brekhovskikh. *Waves in layered Media*. Academic Press, New York, NY, USA, 1960. LCCN QC231 .B85 1960.

**Brillinger:1981:TSD**

[Bri81] D. R. Brillinger. *Time Series: Data Analysis and Theory*. International Series in Decision Processes. Holt, Rinehart, and Winston, New York, NY, USA, 1981. ISBN 0-03-076975-2. various pp. LCCN QA280 .B74.

**Bouvet:1989:CAR**

[BS89] M. Bouvet and S. C. Schwartz. Comparison of adaptive and robust receivers for signal detection in ambient underwater noise. *IEEE Trans. ASSP*, ASSP-37(4): 621, 1989.

**Bucca:1985:PAE**

[BSE85] P. J. Bucca, C. E. Sellinger, and Matthews J. E. A pre-assessment of environmental conditions on the continental shelf adjacent to Jacksonville, Florida. Technical report, NORDA, 1985.

**Blackman:1958:MPS**

[BT58] R. B. Blackman and J. W. Tukey. The measurement of power spectra from the point of view of communications engineering – part I. *The Bell System Technical Journal*, pages 185–282, 1958. CODEN BSTJAN. ISSN 0005-8580.

**Calderon:1964:PDA**

[Cal64] M. A. Calderon. Probability density analysis of ocean ambient and ship noise. Technical report, U.S. Navy Electron. Lab. Rep. 1248, November 1964.

**Chernov:1960:WPR**

[Che60] L. A. Chernov. *Wave Propagation in a Random Medium*. Dover Publications, New York, 1960. 168 pp. LCCN QC231 .C453.

**Chow:1975:xxx**

[Cho75] P. L. Chow. *SIAM Rev.*, 17:57–81, 1975.

**Christiansen:1985:RT**

[Chr85] E. J. Christiansen. *Radio Telescopes*. Cambridge University Press, Cambridge, UK, 1985.

**Collins:1991:FEF**

[CK91] M. D. Collins and W. A. Kuperman. Focalization: environmental focusing and source localization.

J. Acoust. Soc. Am., 90(3):1410–1422, 1991.

**Clasen:1995:ARF**

[Cla95] M. Clasen. Ambientes Rauschen in Flachwasser hervorgerufen durch Wind: Das Wellenmodell, Theorie und Implementierung. Technical report, Ruhr-Universität Bochum, Bochum, Germany, 1995.

**Chan:1994:PSD**

[CMN94] Y. T. Chan, S. P. Morton, and G. H. Niezgoda. Passive sonar detection and localization by matched velocity filtering. In *Seventh SP Workshop on Statistical Signal & Array Processing*, pages 337–340. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, June 26-29 1994.

**Colton:1992:IAE**

[CR92] D. Colton and Kress R. *Inverse Acoustic and Electromagnetic Scattering*. Applied Mathematical Sciences 93. Springer-Verlag, 1992. ISBN 0-387-55518-8, 3-540-55518-8, Bibl: M3 93 74.

**Cron:1962:SCF**

[CS62] B. F. Cron and C. H. Sherman. Spatial-correlation functions for various noise models. *J. Acoust. Soc. Am.*, 34(11):1732–1736, November 1962.

**Candy:1989:MBP**

[CS89] J. V. Candy and E. J. Sullivan. Model-based passive ranging. *J. Acoust. Soc. Am.*, 85(6), June 1989.

**Candy:1992:OAS**

[CS92] J. V. Candy and E. J. Sullivan. Ocean acoustic signal processing: A model-based approach. *J. Acoust. Soc. Am.*, 92(6), December 1992.

**Cox:1987:RAB**

[CZO87] H. Cox, R. M. Zeskind, and M. M. Owen. Robust adaptive beamforming. *IEEE Trans. ASSP*, ASSP-35(10):1365, 1987.

**DeSanto:1979:TCP**

[De 79] J. A. De Santo, editor. *Topics in Current Physics*, volume 8. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1979.

**Devaney:1984:GDT**

[Dev84] A. J. Devaney. Geophysical diffraction tomography. *IEEE Trans. Geos. Remote Sensing*, GE-22(1), 1984.

**Di:1984:MDM**

[DT84] A. Di and L. Tian. Matrix decomposition and multiple source location. *Proc. IEEE ICASSP*, pages Sec. 33–4, 1984.

**duToit:1993:ESA**

[du 93] C. F. du Toit. Evaluation of some algorithms and programs for the computation of integer-order bessel functions of the first and second kind with complex arguments. *IEEE Antennas and Propagation Magazine*, pages 19–25, June 1993.

**Dennis:1987:NCE**

[DW87] J. E. Dennis, Jr. and D. J. Woods. New computing environments: Microcomputers in large-scale computing. In A. Wouk, editor, *New Computing Environments: Microcomputers in Large-Scale Computing*, pages 116–122. SIAM, Philadelphia, PA, USA, 1987.

**E:1984:EFW**

[E.84] Masry E. The estimation of the frequency-wavenumber spectrum using random acoustic arrays – part I. performance of beampower pattern estimators. *J. Acoust. Soc. Am.*, 76(1):139–149, July 1984.

**Efron:1975:DCS**

[Efr75] B. Efron. Defining the curvature of a statistical problem (with applications to second order efficiency). *Ann. Statist.*, 3(6):1189–1242, 1975.

**Efron:1978:GEF**

[Efr78] B. Efron. The geometry of exponential families. *Ann. Statist.*, 6 (2):362–376, 1978.

**Efron:1982:JBO**

[Efr82] B. Efron. *The Jackknife, the Bootstrap, and Other Resampling Plans*. SIAM, Philadelphia, PA, USA, 1982. ISBN 0-89871-179-7. vii + 92 pp. LCCN QA276.8 .E375 1982.

**Evans:1981:HRA**

[EJS81] J. F. Evans, J. R. Johnson, and D. F. Sun. High resolution angular spectrum estimation terrain scattering analysis and angle of arrival estimation. *Proc. on* $1^{st}$ *ASSP Workshop on Spectral Estimation and cento*, page 134, 1981.

**Evans:1982:AAS**

[EJS82] J. F. Evans, J. R. Johnson, and D. F. Sun. Application of advanced signal processing techniques to angel of arrival estimation in A.T.C. navigation and surveillance systems. Technical Report 582, MIT Lincoln Lab, Lexington, MA, 1982.

**Edelson:1994:MSR**

[EK94] G. S. Edelson and I. P. Kirsteins. Modeling and suppression of reverberation components. In *Seventh SP Workshop on Statistical Signal & Array Processing*, pages 437–440. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, June 26-29 1994.

**Efron:1986:BMS**

[ET86] B. Efron and R. Tibshirani. Bootstrap methods for standard errors, confidence intervals, and other measures of statistical accuracy. *Statistical Science*, 1(1):54–77, 1986.

**Feuillade:1989:EMS**

[FDR89] C. Feuillade, D. R. Del Balzo, and M. M. Rowe. Environmental mismatch in shallow-water matched-field processing: Geoacoustic parameter variability. *J. Acoust. Soc. Am.*, 85(6), June 1989.

**Felbecker:19xx:MFE**

[Fel7x] Felbecker. Mathematik für Elektrotechniker, Skript einer Vorlesung an der Ruhr-Universität Bochum, 197x.

**Ferla:1993:CSC**

[FPJ93] C. M. Ferla, M. B. Porter, and F. B. Jensen. C–SNAP: Coupled SACLANTCEN normal mode propagation loss model. SACLANTCEN Memorandum SM-274, La Spezia, December 1993.

**Gabriel:1986:USE**

[Gab86] W. F. Gabriel. Using the spectral estimation in adaptive processing antenna systems. *IEEE Trans. Antennas and Propagation*, 34(3): 291–300, March 1986.

**Gray:1993:TAE**

[GAB93] D. A. Gray, B. D. O. Anderson, and R. R. Bitmead. Towed array estimation using kalman filters – theoretical models. *IEEE J. Oceanic Eng.*, 18(4):543–556, October 1993.

**Gegenbauer:1874:xx**

[Geg74] Gegenbauer. *Wiener Sitzungsberichte*, LXX(2):433ff, 1874.

**Gerstoft:1994:ISD**

[Ger94] P. Gerstoft. Inversion of seismoacoustic data using genetic algorithms and *a posteriori* distributions. *J. Acoust. Soc. Am.*, 95(2): 770–782, February 1994.

**Gerstoft:1995:IAD**

[Ger95] P. Gerstoft. Inversion of acoustic data using a combination of genetic algorithms and the gauss–newton approach. *J. Acoust. Soc. Am.*, 97(4):2181–2190, April 1995.

**Gingras:1995:GIA**

[GG95a] D. F. Gingras and P. Gerstoft. Global inversion of acoustic field data in shallow water using genetic algorithms. In H. Schmidt, O. Diachok, A. Caiti, and P. Gerstoft, editors, *Proc. of Full-field inversion methods in ocean and seismo-acoustics*. Kluwer Academic Publisher, Norwell, MA, USA, and Dordrecht, The Netherlands, Spring 1995.

**Gingras:1995:IGG**

[GG95b] D. F. Gingras and P. Gerstoft. Inversion for geometric and geoacoustic parameters in shallow water: Experimental results. *J. Acoust. Soc. Am.*, 97(6):3589–3598, June 1995.

**Gershman:1995:MES**

[GMB95] A. B. Gershman, A. L. Matveyev, and J. F. Böhme. ML estimation of signal power in the presence of unknown noise field – simple approximate estimator and explicit cramer-rao bound. In *Proc. IEEE ICASSP*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, May 4-8 1995.

**Graybill:1976:TAL**

[Gra76] F. A. Graybill. *Theory and Application of the Linear Model.*

Wadsworth Publishing Inc., Pacific Grove, California, 1976. ISBN 0-87872-108-8. xiv + 704 pp. LCCN QA279 .G7.

**Gershman:1994:ADM**

[GZ94] A. B. Gershman and V. A. Zverev. Adaptive detection of moving signal using shallow sea hydroacoustic data. In *Proc. IEEE ICASSP*, pages II–297–II–300. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, April 19-23 1994.

**Hamson:1985:TRV**

[Ham85] Rachel M. Hamson. The theoretical responses of vertical and horizontal line arrays to wind-induced noise in shallow water. *J. Acoust. Soc. Am.*, 78(5):1702–1712, November 1985.

**Hassab:1984:EUH**

[Has84] J. C. Hassab. The effect of uncertainty in the heading or placement of a sub-array on passive ranging accuracy. *J. Acoust. Soc. Am.*, 75 (2):479–485, February 1984.

**Halpeny:1975:CWD**

[HC75] O. Halpeny and D. G. Childers. Composite wavefront decomposition via multidimensional filtering of array data. *IEEE Trans. Circuits ans Systems*, 22(6), June 1975.

**Hinich:1977:ADM**

[Hin77] M. J. Hinich. Array design for measuring source depth in a horizontal waveguide. *SIAM J. of Applied Math.*, 32(4):800–806, July 1977.

**Hinich:1979:MLE**

[Hin79] M. J. Hinich. Maximum-likelihood estimation of the position of a radiating source in a waveguide. *J. Acoust. Soc. Am.*, 66(2):480–483, August 1979.

**Hung:1987:SSC**

[HK87] H. Hung and M. Kaveh. On the statistical sufficiency of the coherently averaged covariance matrix for the estimation of the parameters of wideband sources. In *Proc. IEEE ICASSP*, volume 1, pages 33–36. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, April 1987.

**Hollett:1994:OUS**

[Hol94] R. D. Hollett. Observations of underwater sound at frequencies below 1500 hz from breaking waves at sea. *J. Acoust. Soc. Am.*, 95(1): 165–170, January 1994.

**Hemminger94a**

[HP94] T. L. Hemminger and Y. H. Pao. Detection and classification of underwater acoustic transients using neural networks. *IEEE Trans Neural Networks*, 5(5):712–718, September 1994.

**Hinich:1989:MLP**

[HS89] M. J. Hinich and E. J. Sullivan. Maximum-likelihood passive localization using mode-filtering. *J. Acoust. Soc. Am.*, 85(1):214–219, January 1989.

**Hamilton:1992:PRM**

[HS92] M. Hamilton and P. M. Schultheiss. Passive ranging in multipath dominant environments, part I: Known multipath parameters. *IEEE Trans. Signal Processing*, 40(1):1–12, January 1992. See also [HS93].

**Hamilton:1993:PRM**

[HS93] M. Hamilton and P. M. Schultheiss. Passive ranging in multipath dominant environments, part II: Unknown multipath parameters. *IEEE Trans. Signal Processing*, 41 (1):1–12, January 1993.

**Ingenito:1978:SWA**

[IFKW78] F. Ingenito, R. Ferris, W. A. Kuperman, and S. N. Wolf. Shallow-water acoustics, summary report (first phase). Technical Report NRL Report 8179, U.S. Naval Research Laboratory, Washington, DC, 1978.

**Imbriale:1994:SIR**

[Imb94] Special issue on radio telescopes. In W. A. Imbriale and M. Thorburn, editors, *Proceedings of the IEEE*, volume 82, pages 629–828. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, May 1994.

**Ingenito:1972:MMA**

[Ing72] F. Ingenito. Measurements of mode attenuation coefficients in shallow water. *J. Acoust. Soc. Am.*, 53(3):858–862, July 1972.

**Jesus:19xx:EGB**

[JCxx] S. M. Jesus and A. Caiti. Estimating geoacoustic bottom properties from towed array data. *J. Computational Acoust.*, 19xx. Submitted.

**Jesus:1993:GSM**

[JCZ93] S. M. Jesus, A. Caiti, and H. Zambujo. Geophysical seafloor monitoring with a towed array in shallow water, 12-month progress report. Technical Report MAS2-CT920022, Economic European Community, DG XII, December 1993.

**Jesus:1994:GSM**

[JCZ94] S. M. Jesus, A. Caiti, and H. Zambujo. Geophysical seafloor monitoring with a towed array in shallow water, 24-month progress report. Technical Report MAS2-CT920022, Economic European Community, DG XII, December 1994.

**Jensen:1976:APW**

[Jen76] F. B. Jensen. Acoustic propagation modelling: why several models? Technical Report SACLANTCEN CP-19, SACLANT ASW Research Centre, La Spezia/Italy, 1976. AD CO 10187.

**Jensen:19xx:CPP**

[Jenxx] F. B. Jensen. CW and pulse propagation modeling on ocean acoustics. 19xx.

**Jesus:1991:NMM**

[Jes91] S. M. Jesus. Normal-mode matching localization in shallow water: environmental and system effects. *J. Acoust. Soc. Am.*, 90: 2034–2041, 1991.

**Jesus:1993:BMF**

[Jes93] S. M. Jesus. Broadband matched field processing of transient signals in shallow water. *J. Acoust. Soc. Am.*, 93(4):1841–1850, April 1993.

**Jesus:1994:SSF**

[Jes94] S. M. Jesus. A sensitivity study for full-field inversion of geo-acoustic data with a towed array in shallow water. In L. Bjørnø, editor, *Proc. 2nd Europ. Conf. Underwater Acoustics*, volume 2, pages 899–904. European Commission, Copenhagen, July 1994.

**Jensen:1979:SSN**

[JF79] F. B. Jensen and M. C. Ferla. *SNAP: The SACLANTCEN Normal-Mode Acoustic Propagation Model*. SACLANT ASW Research Centre, La Spezia/Italy, January 1979.

**Jensen:1975:UPE**

[JK75] F. B. Jensen and H. R. Krol. The use of the parabolic equation method in sound propagation modelling. Technical Report SACLANTCEN SM-72, SACLANT ASW Research Centre, La Spezia/Italy, 1975.

**Jensen:1994:COA**

[JKPS94] F. B. Jensen, W. A. Kuperman, M. B. Porter, and H. Schmidt. *Computational Ocean Acoustics*. American Institute of Physics Press, New York, 1994. ISBN 1-56396-209-8. xvi + 612 pp. LCCN QC242.2 .C66 1994.

**Johnson:1982:ASE**

[Joh82] D. Johnson. Application of spectral estimation methods for bearing estimation problems. *Proc IEEE*, 70(6):1018–1028, September 1982.

**Kailath:1981:LWK**

[Kai81] T. Kailath. *Lectures on Wiener and Kalman Filtering*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1981.

**Kato:1966:PTL**

[Kat66] Tosio Kato. *Perturbation Theory for Linear Operators*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1966. xix + 592 pp. LCCN QA320 .K33.

**Kato:1982:SIP**

[Kat82] Tosio Kato. *A Short Introduction to Perturbation Theory for Linear Operators*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1982. ISBN 0-387-90666-5. xiii + 161 pp. LCCN QA329.2 .K3725 1982.

**Kraus:1990:AER**

[KB90] D. Kraus and J. F. Böhme. Asymptotic and empirical results on approximate maximum likelihood and least squares estimates for sensor array processing. In *Proc. IEEE ICASSP*, pages 1379–1384. Albuquerque, 1990.

**Kraus:1993:EDM**

[KDB93] D. Kraus, A. Dhaouadi, and J. F. Böhme. EM dual maximum likelihood estimation for wideband source location. In *Proc. IEEE ICASSP*, pages I–257, I–260. Minneapolis, 1993.

**Kuperman:1977:ACC**

[KI77] W. A. Kuperman and F. Ingenito. Attenuation of the coherent component of sound propagation in shallow water with rough boundaries. *J. Acoust. Soc. Am.*, 61(5): 1178–1187, September 1977.

**Kuperman:1980:SCS**

[KI80] W. A. Kuperman and F. Ingenito. Spatial correlation of surface generated noise in a stratified ocean. *J. Acoust. Soc. Am.*, 67(6):1988–1996, June 1980.

**Knight:1981:DSP**

[KKK81] R. Knight, W. C. Kay, and S. M. Kay. Digital signal processing for sonar. *Proc IEEE*, 69(?), November 1981.

**Kloeden:1993:NSS**

[KP93] P. E. Kloeden and E. Platen. Numerical solution of stochastic differential equations. In *Applications of Mathematics 23*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1993. ISBN 3-540-54062-8, 0-387-54062-8.

**Kraus:1987:MML**

[Kra87] D. Kraus. Modifikation von Maximum-Likelihood-Schätzern für Wellenparameter unter Berücksichtigung von Umgebungsrauschen. Master's thesis, Ruhr-Universität Bochum, 1987.

**Kraus:1993:AML**

[Kra93] D. Kraus. *Approximative Maximum-Likelihood-Schätzung und verwandte Verfahren zur Ortung und Signalschätzung mit Sensorgruppen*. PhD thesis, Ruhr-Universität Bochum, D-44780 Bochum, Germany, 1993.

**Krolik:1992:MFM**

[Kro92] J. L. Krolik. Matched-field minimum variance beamforming in a random ocean channel. *J. Acoust. Soc. Am.*, 92(3):1408–1419, September 1992.

**Kuperman:1985:TAR**

[KWG85] W. A. Kuperman, M. F. Werby, and K. E. Gilbert. Towed array response to ship noise: A near-field propagation. In H. G. Urban, editor, *Adaptive Methods in Underwater Acoustics*, volume 151 of *Series C: Mathematical and Physical Sciences*, pages 71–80. Kluwer Academic Publisher, Norwell, MA, USA, and Dordrecht, The Netherlands, 1985.

**Laval:1985:AMP**

[LD85] R. Laval and J. M. Drezet. An analytical method to predict the statistical characteristics of ambient shipping noise. In H. G. Urban, editor, *Adaptive Methods in Underwater Acoustics*, volume 151 of *Series C: Mathematical and Physical Sciences*, pages 37–48.

Kluwer Academic Publisher, Norwell, MA, USA, and Dordrecht, The Netherlands, 1985.

**Lawson:1974:SLS**

[LH74] C. L. Lawson and R. J. Hanson. *Solving Least Squares Problems*. Series in Automatic Computation. Prentice-Hall, Englewood Cliffs, NJ 07632, USA, 1974. ISBN 0-13-822585-0. xii + 340 pp. LCCN QA275 .L425 1974.

**Landau:1952:H**

[LL52] L. D. Landau and E. M. Lifschitz. *Hydrodynamik*. Number 6 in Lehrbuch der theoretischen Physik. Verlag Harri Deutsch, Thun, 5. (1991) edition, 1952.

**Landau:1953:E**

[LL53] L. D. Landau and E. M. Lifschitz. *Elastizitätstheorie*. Number 7 in Lehrbuch der theoretischen Physik. Verlag Harri Deutsch, Thun, 6. (1989) edition, 1953.

**Lewis:1971:ELM**

[LO71] T. O. Lewis and P. L. Odell. *Estimation in Linear Models*. Prentice-Hall, Englewood Cliffs, NJ 07632, USA, 1971. ISBN 0-13-289967-1. xi + 193 pp. LCCN QA276.8 .L48.

**Lim:1994:UAFa**

[LO94a] P. H. Lim and J. M. Ozard. On the underwater acoustic field of a moving point source. part I: Range-independent environment. *J. Acoust. Soc. Am.*, 95(1):131–137, January 1994.

**Lim:1994:UAFb**

[LO94b] P. H. Lim and J. M. Ozard. On the underwater acoustic field of a moving point source. part II: Range-dependent environment. *J. Acoust. Soc. Am.*, 95(1):138–151, January 1994.

**Li:1990:SLM**

[LS90] Shaolin Li and Peter M. Schultheiss. Source localization in a multipath environment using random or deterministic signals. In *5th ASSP Workshop on Spectrum Estimation and Modelling*. Rochester, October 1990.

**Li:1993:DMR**

[LS93] Shaolin Li and Peter M. Schultheiss. Depth measurement of remote sources using multipath propagation. *IEEE Journal of Oceanic Engineering*, 18(4):379–387, October 1993. Special Issue on Sonar System Technology.

**Li:19xx:EUS**

[LTxx] S. Li and F. B. Tuteur. Estimation of underwater source parameters by use of multipath information. *Fourth IEEE Workshop*, 19xx.

**Ma:1974:TAA**

[Ma74] M. T. Ma. *Theory and Application of Antenna Arrays*. John Wiley & Sons, New York, NY, USA, 1974. ISBN 0-471-55795-1. xiii + 413 pp. LCCN TK7871.6 .M3.

**Maiwald:1989:UKQ**

[Mai89] D. Maiwald. Untersuchung eines Kleinste-Quadrate- bzw.

eines approximativen Maximum-Likelihood-Zweistufenschätzers zur Analyse stationärer Wellenfelder. Master's thesis, Ruhr-Universität Bochum, 1989.

**Maiwald:1995:BSO**

[Mai95] D. Maiwald. *Breitbandverfahren zur Signalentdeckung und –ortung mit Sensorgruppen in Seismik– und Sonaranwendungen.* PhD thesis, Ruhr-Universität Bochum, May 1995.

**Martin:1972:RES**

[Mar72] R. D. Martin. Robust estimation of signal amplitude. *IEEE Trans. on Information Theory*, IT-18: 596–606, 1972.

**Maiwald:1992:WPE**

[MB92] D. Maiwald and J. F. Böhme. Wave parameter estimation for transient data. In J. M. F. Moura and I. M. G. Lourtie, editors, *Acoustic Signal Processing for Ocean Exploration*, NATO ASI Series, pages 321–326. D.Reidel, Dordrecht, 1992.

**Maiwald:1994:MTS**

[MB94a] D. Maiwald and J. F. Böhme. Multiple testing for seismic data using bootstrap. In *Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994.

**Mecklenbraeuker:1994:MFPb**

[MB94b] C. F. Mecklenbräuker and J. F. Böhme. Matched field processing in shallow ocean: Identification of multimode propagation. In L. Bjørnø, editor, *Second European Conference on Underwater Acoustics*, pages 611–616. European Commission, Copenhagen, July 4-8 1994.

**Mecklenbraeuker:1994:MFPa**

[MB94c] C. F. Mecklenbräuker and J. F. Böhme. Matched field processing in shallow ocean: Signal arrival identification using EM algorithm. In *Proc. IEEE ICASSP*, pages II–337–II–340. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, April 19-23 1994.

**Morse:1953:MTP**

[MF53] P. M. Morse and H. Feshbach. *Methods of Theoretical Physics, Part I and II, Section 2.3, "Motion of Fluids"*. McGraw-Hill, New York, NY, USA, 1953.

**Mecklenbraeuker:1995:MEE**

[MGB95] C. F. Mecklenbräuker, A. Gershman, and J. F. Böhme. ML-estimation of environmental parameters in shallow ocean using unknown broadband sources. In *Proc. IEEE ICNNSP'95*, page to be published. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, December 1995.

**Mecklenbraeuker:1996:BMF**

[MGB96] C. F. Mecklenbräuker, M. Geravanchizadeh, and J. F. Böhme. Broadband matched field processing using robust prewhitening and multiple window techniques. In *Proc. IEEE ICASSP*, page to be published. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, May 1996.

**Maiwald:1991:WLS**

[MKBB91] D. Maiwald, D. Kraus, G. Bugla, and J. F. Böhme. A weighted least squares criterion for estimation of signal parameters in wavefields. In *Int. Conf. on Sonar Signal Processing*, pages 95–101. Loughborough, UK, 1991.

**Martin-Lauzer:1994:PRI**

[MLMS94] F. R. Martin-Lauzer, D. Mauuary, and Y. Stephan. Probabilistic ray identification: A new tool for ocean acoustic tomography. In *Proc. IEEE ICASSP*, pages II–305–II–308. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, April 19-23 1994.

**Maiwald:1993:MIV**

[MMB93a] D. Maiwald, J. W. Dalle Molle, and J. F. Böhme. Model identification and validation of nonstationary seismic signals. In *Proc. IEEE Signal Processing Workshop on Higher - Order Statistics*. South Lake Tahoe, California, USA, 1993.

**Maiwald:1993:PMN**

[MMB93b] D. Maiwald, J. W. Dalle Molle, and J. F. Böhme. Parametric methods for nonstationary seismic data analysis. In *Proc. SPIE Int. Symp. on Optics, Imaging, and Instrumentation*, pages 278–288. San Diego, USA, 1993.

**Mecklenbraeuker:1995:FTM**

[MMB95] C. F. Mecklenbräuker, D. Maiwald, and J. F. Böhme. F-test in matched field processing: Identifying multimode propagation. In *Proc. IEEE ICASSP*, pages 3123–3126. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, May 8-12 1995.

**Milios:1990:ATC**

[MN90] E. E. Milios and S. H. Nawab. Acoustic tracking from closest point of approach time, amplitude, and frequency at spatially distributed sensors. *J. Acoust. Soc. Am.*, 87(3):1026–1034, March 1990.

**Martin:1982:RRS**

[MT82] R. D. Martin and D. J. Thomson. Robust-resistant spectrum estimation. *Proceedings of the IEEE*, 70 (9):1097–1115, September 1982.

**Meyberg:1990:HM**

[MV90] Meyberg and Vachenauer. *Höhere Mathematik*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1990?

**Narasimhan:1994:CRB**

[NK94] S. Narasimhan and J. L. Krolik. A cramer-rao bound for source range estimation in a random ocean waveguide. In *Seventh SP Workshop on Statistical Signal & Array Processing*, pages

309–312. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, June 26-29 1994.

**Nehorai:1988:AML**

[NL88] A. Nehorai and S. Li. An asymptotic maximum likelihood estimator for source parameters in a multipath environment. 1988.

**Nelder:1965:SMF**

[NM65] J. A. Nelder and R. Mead. A simplex method for function minimization. *The Computer Journal*, 7(4):308–313, January 1965. CODEN CMPJA6. ISSN 0010-4620 (print), 1460-2067 (electronic). URL `http://www3.oup.co.uk/computer_journal/hdb/Volume_07/Issue_04/070308.sgm.abs.html`; `http://www3.oup.co.uk/computer_journal/hdb/Volume_07/Issue_04/tiff/308.tif`; `http://www3.oup.co.uk/computer_journal/hdb/Volume_07/Issue_04/tiff/309.tif`; `http://www3.oup.co.uk/computer_journal/hdb/Volume_07/Issue_04/tiff/310.tif`; `http://www3.oup.co.uk/computer_journal/hdb/Volume_07/Issue_04/tiff/311.tif`; `http://www3.oup.co.uk/computer_journal/hdb/Volume_07/Issue_04/tiff/312.tif`; `http://www3.oup.co.uk/computer_journal/hdb/Volume_07/Issue_04/tiff/313.tif`.

**Nguyen:1994:CPB**

[NV94] H. Nguyen and H. L. Van Trees. Comparison of performance bounds for DOA estimation. In *Seventh SP Workshop on Statistical Signal & Array Processing*, pages 313–316. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, June 26-29 1994.

**Oksendal:1985:SDE**

[Øks85] B. Øksendal. *Stochastic Differential Equations*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1985. ISBN 0-387-15292-X. xiii + 205 pp. LCCN QA274.23 .O47 1985.

**Burdic:1984:UAS**

[Opp84] A. V. Oppenheim, editor. *Underwater Acoustic System Analysis*. Signal Processing Series. Prentice-Hall, Englewood Cliffs, NJ 07632, USA, 1984.

**Pekeris:1948:TPE**

[Pek48] C. L. Pekeris. Theory of propagation of explosive sound in shallow water. *Geol. Soc. Am. Mem.*, 27, 1948. See also [De 79].

**Porat:1983:ESS**

[PF83] B. Porat and B. Friedlander. Estimation of spacial and spectral parameters of multiple sources. *IEEE Trans. on Information Theory*, 29(5):412–428, May 1983.

**Park:1989:RSE**

[PG89] S. Park and L. A. Gerhardt. A robust spectral estimation by modeling an estimated autocovariance with an ARMA model. *IEEE Trans. ASSP*, ASSP-37(2): 181, 1989.

**Porter:1991:KNM**

[Por91] M. B. Porter. The KRAKEN normal mode program. SACLANTCEN Memorandum SM-245, La Spezia, September 1991.

**Porter:1993:AMS**

[Por93] Michael B. Porter. Acoustic models and sonar systems. *IEEE Journal of Oceanic Engineering*, 18(4): 425ff, October 1993.

**Preisig:1994:MAA**

[Pre94] James C. Preisig. A minimax approach to adaptive matched field processing in an uncertain propagation environment. *IEEE Trans. Signal Processing*, 42(6): 1305–1316, June 1994.

**Priestly:1981:SATa**

[Pri81a] M. B. Priestly. *Spectral Analysis and Time Series*, volume I, Univariate Series of *Probability and Mathematical Statistics*. Academic Press, New York, NY, USA, 1981.

**Priestly:1981:SATb**

[Pri81b] M. B. Priestly. *Spectral Analysis and Time Series*, volume II, Multivariate Series, Prediction and Control of *Probability and Mathematical Statistics*. Academic Press, New York, NY, USA, 1981.

**Purkop:1995:AFT**

[Pur95] T. Purkop. Anwendung des F-Tests auf Sonardaten im Flachwasser: Ebene Wellen und Modenausbreitung. Technical report, Ruhr-Universität Bochum, Bochum, Germany, 1995.

**Percival:1993:SAP**

[PW93] D. B. Percival and A. T. Walden. *Spectral Analysis for Physical Applications, Multitaper and Conventional Univariate Techniques*. Cambridge University Press, Cambridge, UK, 1993. ISBN 0-521-35532-X (hardcover), 0-521-43541-2 (paperback). xxvii + 583 pp. LCCN QA320 .P434 1993.

**Riley:1993:TAE**

[RG93] J. L. Riley and D. A. Gray. Towed array estimation using kalman filters – experimental results. *IEEE J. Oceanic Eng.*, 18(4):572–581, October 1993.

**Rao:1971:GIM**

[RM71] C. R. Rao and S. K. Mitra. *Generalized Inverse of Matrices and its Applications*. Wiley Series in Probability and Mathematical Statistics. John Wiley & Sons, New York, NY, USA, 1971. ISBN 0-471-70821-6. xiv + 240 pp. LCCN QA263 .R28.

**Roach:1970:GF**

[Roa70] G. F. Roach. *Green's Functions*. Cambridge University Press, Cambridge, UK, 1970. ISBN 0-442-06959-6. xii + 279 pp. LCCN QA372 .R74.

**Roach:1982:GF**

[Roa82] G. F. Roach. *Green's Functions*. Cambridge University Press, Cambridge, UK, second edition, 1982. ISBN 0-521-23890-0 (hardcover), 0-521-28288-8 (paperback). xiii + 325 pp. LCCN QA379 .R6 1982.

**Rosenblatt:1985:SSR**

[Ros85] M. Rosenblatt. *Stationary Sequences and Random Fields*. Birkhäuser, Cambridge, MA, USA; Berlin, Germany; Basel, Switzerland, 1985. ISBN 0-8176-3264-6. 258 pp. LCCN QA280 .R67 1985.

**Renardy:1993:IPD**

[RR93] M. Renardy and R. C. Rogers. *An Introduction to Partial Differential Equations*, volume 13 of *Texts in Applied Mathematics*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1993. ISBN 0-387-97952-2. xiii + 428 pp. LCCN QA374 .R424 1993.

**Rockah:1987:ASC**

[RS87] Y. Rockah and P. M. Schultheiss. Array shape calibration using sources in unknown locations – part I: Far-field sources. *IEEE Trans. ASSP*, 35(3):286–2xx, March 1987.

**Rao:1994:TDA**

[RSZ94] C. R. Rao, C. R. Sastry, and B. Zhou. Tracking the direction of arrival of multiple moving targets. *IEEE Trans. Signal Processing*, 42 (5):1133–1143, May 1994.

**Schneider:1995:AMA**

[Sch95] H. G. Schneider. Acoustic models at SACLANTCEN. SACLANTCEN Memorandum SM-285, La Spezia, March 1995.

**Skolnik:1962:IRS**

[Sko62] M. I. Skolnik. *Introduction to Radar Systems*. McGraw-Hill, New York, NY, USA, 1962. 648 pp. LCCN TK6575 .S477.

**Slepian:1978:PSW**

[Sle78] D. Slepian. Prolate spheroidal wave functions, Fourier analysis, and uncertainty- V: The discrete case. *The Bell System Technical Journal*, 57:1371–1429, 1978. CODEN BSTJAN. ISSN 0005-8580.

**Schultheiss:1993:OSB**

[SM93] P. M. Schultheiss and H. Messer. Optimal and suboptimal broadband source location estimation. *IEEE Trans. Signal Processing*, 41(9):2752–2763, September 1993. See also [LS90].

**Smirnov:19xx:LMB**

[Smixx] Smirnov. *Lehrbuch der Mathematik, Band IV*. 19xx. 228ff pp.

**Sobczyk:1985:SWP**

[Sob85] K. Sobczyk. *Stochastic Wave Propagation*. Elsevier Science Publishers B. V., Amsterdam, The Netherlands, 1985. ISBN 0-444-99614-1. viii + 248 pp. LCCN QA927 .S6313 1985. US$90.00.

**Sommerfeld:1962:MDM**

[Som62a] A. Sommerfeld. *Mechanik der deformierbaren Medien*. Number 2 in Vorlesungen über Theoretische Physik. Akademische Verlagsgesellschaft, Leipzig, 1962.

**Sommerfeld:1962:PDP**

[Som62b] A. Sommerfeld. *Partielle Differentialgleichungen der Physik.* Number 6 in Vorlesungen über Theoretische Physik. Akademische Verlagsgesellschaft, Leipzig, 1962.

**Sullivan:1987:PRS**

[SR87] E. J. Sullivan and K. Rameau. Passive ranging with the SNAP model: A performance study. SACLANTCEN Report SR-118, La Spezia, July 1987.

**Stergiopoulos:1988:ETA**

[SS88] S. Stergiopoulos and E. J. Sullivan. Extended towed-array processor by overlapped correlator. SACLANTCEN Memorandum SM-214, La Spezia, November 1988.

**Serebryakov:1995:CEI**

[SSM95] G. V. Serebryakov, D. V. Sidorovitch, and C. F. Mecklenbräuker. Coherence effects of the interference on the performance of optimum/adaptive beamformer. In *Proc. IEEE ICASSP*, pages 3631–3634. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, May 8-12 1995.

**Stoker:1957:WWM**

[Sto57] J. J. Stoker. *Water Waves, The Mathematical Teory with Applications.* Wiley Classics Library. John Wiley & Sons, New York, NY, USA, reprinted 1992 edition, 1957. ISBN 0-471-57034-6.

**Schneider:1985:MSA**

[STW85] H. G. Schneider, R. Thiele, and P. C. Wille. Measurement of sound absorption in low salinity water of the baltic sea. *J. Acoust. Soc. Am.*, 77(4):1409–1412, April 1985.

**Stoica:1994:OLP**

[SVOK94] P. Stoica, M. Viberg, B. Ottersten, and T. Kailath. OPTIMAL LOCALIZATION OF PARTIALLY KNOWN SIGNALS IN UNKNOWN NOISE FIELDS. *Proc. IEEE ICASSP*, 4:217, April 19-22 1994.

**Swingler:1994:SAC**

[Swi94] D. N. Swingler. Simple approximation to the cramer rao lower bound on directions of arrival for closely spaced sources. *IEEE Trans. ASSP*, 41(4):1668–1672, April 1994.

**Tarantola:1986:IPT**

[Tar86] A. Tarantola. *Inverse Problem Theory.* Elsevier Science Publishers B. V., Amsterdam, The Netherlands, 1986. ISBN 0-444-42765-1. xvi + 613 pp. LCCN QA371 .T36 1987.

**Turchin:1995:SAA**

[TG95] V. L. Turchin and A. B. Gershman. Sensor array approach to nonwave field processing. In *Proc. IEEE ICASSP*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, May 4-8 1995.

**Thiel:1987:ACM**

[Thi87] R. Thiel. The application of coupled-mode theory to propagation in shallow water with randomly varying sound speed. SACLANTCEN Memorandum SM-199, La Spezia, June 1987.

**Thomson:1977:SET**

[Tho77] D. J. Thomson. Spectrum estimation techniques for characterization and development of WT 4 waveguide – part I and II. *The Bell System Technical Journal*, 56: 1769–1815, 1977. CODEN BSTJAN. ISSN 0005-8580.

**Thomson:1980:QIS**

[Tho80] D. J. Thomson. Quadratic-inverse spectrum estimates: Applications to palaeoclimatology. *Phil. Trans. Royal Society London*, A(332): 539–597, 1980.

**Thomson:1982:SEH**

[Tho82] D. J. Thomson. Spectrum estimation and harmonic analysis. *Proceedings of the IEEE*, 70(9):1055–1096, September 1982.

**Thomson:1994:JMW**

[Tho94] D. J. Thomson. Jackknifing multiple-window spectra. In *Proc. IEEE ICASSP*, pages VI–73–VI–76. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, April 19-22 1994.

**Urick:1967:PUS**

[Uri67] R. J. Urick. *Principles of Underwater Sound*. McGraw-Hill, New York, NY, USA, second edition, 1967. ISBN 0-07-066085-9. x + 342 pp. LCCN QC225 .U7.

**Viberg:1989:SFC**

[Vib89] M. Viberg. *Subspace Fitting Concepts in Sensor Array Processing*. PhD thesis, Linköping University, 1989.

**Viberg:1991:EUN**

[Vib91] M. Viberg. Effects of unknown noise covariance on parametric array processing algorithms. In *Proc. 9th IFAC/IFORS Symp. Identification, System Parameter Estimation*, pages 1392–1397. Budapest, 1991.

**Viberg:1991:SAP**

[VO91] M. Viberg and B. Ottersten. Sensor array processing based on subspace fitting. *IEEE Trans. Signal Processing*, 39:1110–1121, 1991.

**Viberg:1991:DES**

[VOK91] M. Viberg, B. Ottersten, and T. Kailath. Detection and estimation in sensor arrays using weighted subspace fitting. *IEEE Trans. Signal Processing*, 39:2436–2449, 1991.

**Viberg:1994:BAD**

[VS94] M. Viberg and A. Swindlehurst. A BAYESIAN APPROACH TO DIRECTION FINDING WITH PARAMETRIC ARRAY UNCERTAINTY. *Proc. IEEE ICASSP*, 4:85–88, April 19-22 1994.

**Watson:1966:TTB**

[Wat66] G. N. Watson. *A Treatise on the Theory of Bessel Functions*. Cambridge University Press, Cambridge, UK, second edition, 1966. ISBN 0-521-09382-1. vi + 804 pp. LCCN QA 408 W33t 1966.

**Wille:1985:ANC**

[Wil85] P. C. Wille. Ambient noise: Characteristics of the noise field. In H. G. Urban, editor, *Adaptive Methods in Underwater Acoustics*, volume 151 of *Series C: Mathematical and Physical Sciences*, pages 13–35. Kluwer Academic Publisher, Norwell, MA, USA, and Dordrecht, The Netherlands, 1985.

**Xu:1994:CWM**

[Xu94] Y. Xu. Continuous wave mode structure and constraint beamforming in a waveguide with unknown large inclusions. *J. Acoust. Soc. Am.*, 95(1):152–164, January 1994.

**Ziomek:1995:FAF**

[Zio95] L. J. Ziomek. *Fundamentals of Acoustic Field Theory and Space-Time Signal Processing*. CRC Press, 2000 Corporate Blvd., Boca Raton, FL 33431, USA, 1995. ISBN 0-8493-9455-4. xiii + 692 pp. LCCN QC233 .Z66 1995.