

## **Publications**

### **A) Theses**

1. Master of Engineering: Evolutionary pattern recognition systems, Department of Electronics, Technical University of Gdansk, 1977
2. Doctor of Philosophy: Local modeling of stochastic systems, Department of Electronics, Technical University of Gdansk, 1981
3. Habilitation: Identification of nonstationary stochastic systems, Department of Electronics, Technical University of Warsaw, 1991

### **B) Books**

1. Niedźwiecki M.: Identification of Time-varying Processes, Wiley, 2000 (reprinted in 2001)

### **C) Journal Papers**

1. Nowakowski J., Niedźwiecki M.: Practical aspects of the method of statistical linearization with applications to identification of nonlinear systems ( in Polish ), Proc. of the Technical Univ. of Gdansk, No. 296, pp. 23-38, 1979
2. Niedźwiecki M.: On a method of identification of the nonlinear static characteristic of a Hammerstein system ( in Polish ), Archives of Automatic Control and Telemechanics, No. 1, pp. 51-62, 1980
3. Niedźwiecki M.: On the localized estimators and generalized Akaike's criteria IEEE Trans. Auto. Control, vol. AC-29, pp. 970-983, 1984 [regular]
4. Niedźwiecki M.: Bayesian-like autoregressive spectrum estimation in the case of unknown process order IEEE Trans. Auto. Control, vol. AC-30, pp. 950-961, 1985
5. Niedźwiecki M., First-order tracking properties of weighted least squares estimators, IEEE Trans. Auto. Control, vol. AC-33, pp. 94-96, 1988
6. Niedźwiecki M.: On tracking characteristics of weighted least squares estimators applied to nonstationary system identification IEEE Trans. Auto. Control, vol. AC-33, pp. 96-98, 1988.
7. Niedźwiecki M.: Functional series modelling approach to identification of nonstationary stochastic systems IEEE Trans. Auto. Control, vol. AC-33, pp. 955-961, 1988
8. Niedźwiecki M.: Steady state and parameter tracking properties of self-tuning minimum variance regulators Automatica vol. 25 pp. 597-602, 1989
9. Niedźwiecki M.: Identification of nonstationary stochastic systems using parallel estimation schemes IEEE Trans. Auto. Control, vol. AC-35, pp. 329-334, 1990
10. Niedźwiecki M.: Recursive functional series modelling estimators for adaptive control of time-varying plants - more bad news than good ? IEEE Trans. Auto. Control, vol AC-35, pp.610-616, 1990
11. Niedźwiecki M.: Identification of time-varying systems using combined parameter estimation and filtering IEEE Trans. Acoustics, Speech and Signal Process., vol. 38, pp. 679-686, 1990 [regular]
12. Moore J.B., Niedźwiecki M., Lige Xia: Identification/prediction algorithms for ARMAX models with relaxed positive real conditions Int. Journ. Adaptive Contr. and Signal Process., vol. 4, pp. 49-67, 1990
13. Niedźwiecki M.: Identification of nonstationary stochastic systems, Proc. of the Technical Univ. of Gdansk, No. 69, pp. 1-126, 1990
14. Niedźwiecki M., L. Guo: Nonasymptotic results for finite-memory WLS filters IEEE Trans. Auto. Contr., vol. AC-36, pp. 515-522, 1991 [regular]
15. Niedźwiecki M.: Multiple model approach to adaptive filtering IEEE Trans. Signal Processing, vol. 40, pp. 470-474, 1992
16. Niedźwiecki M.: Statistical reconstruction of multivariate time series IEEE Trans. Signal Processing, vol. 41, pp. 451-457, 1993
17. Niedźwiecki M.: Identification of time-varying systems with abrupt parameter changes Automatica, vol. 30, pp. 447-459, 1994 [regular]
18. Niedźwiecki M.: On statistical reconstruction of vector random fields Appl. Math. and Comp. Sci., vol. 4, pp. 53-78, 1994
19. Niedźwiecki M., Suchomski P.: On a new class of edge-preserving filters for noise rejection from images Machine Graphics & Vision, vol. 3, pp. 385-392, 1994

20. Niedźwiecki M., Sethares W. A.: Smoothing of discontinuous signals: the competitive approach IEEE Trans. Signal Processing, vol. 43, pp. 1-13, 1995 [regular]
21. Mrozowski M., Niedźwiecki M., Suchomski P.: A fast recursive highly dispersive absorbing boundary condition using time domain diakoptics and Laguerre polynomials IEEE Microwave and Guided Wave Letters, vol. 5, pp. 183-185, 1995
22. Niedźwiecki M., Cisowski K.: Adaptive scheme for elimination of broadband noise and impulsive disturbances from AR and ARMA signals IEEE Trans. Signal Processing, vol. 44, pp. 528-537, 1996 [regular]
23. Niedźwiecki M., Wasilewski A.: Application of adaptive Filtering to dynamic weighing of vehicles Control Eng. Practice, vol. 4, pp. 635-644, 1996
24. Niedźwiecki M., Suchomski P.: On parallel estimation approach to adaptive filtering Bulletin of the Polish Academy of Sciences, Technical Science Series, vol. 44, pp. 297-309, 1996
25. Mrozowski M., Niedźwiecki M., Suchomski P.: Improved wideband highly dispersive absorbing boundary condition Electronics Letters, vol. 32, pp. 1109-1111, 1996.
26. Niedźwiecki M., Wasilewski A.: New algorithms for the dynamic weighing of trains Control Eng. Practice, vol. 5, pp. 705-715, 1997.
27. Niedźwiecki M.: Fast reconstruction algorithm for ARMA signals Bulletin of the Polish Academy of Sciences, Technical Science Series, vol. 47, pp. 19-27, 1999
28. Cisowski K., Niedźwiecki M., Barski M.: On a new approach to reconstruction of audio signals Bulletin of the Polish Academy of Sciences, Technical Science Series, vol. 48, pp. 561-572, 2000
29. Niedźwiecki M., Cisowski K.: Smart copying - a new approach to reconstruction of audio signals IEEE Transactions on Signal Processing, vol. 49, pp. 2272-2282, 2001 [regular]
30. Niedźwiecki M., Klaput.: Do WLS adaptive filters provide better tracking performance than LMS filters? Bulletin of the Polish Academy of Sciences, Technical Sciences, 2001, Vol.49, pp. 517-525
31. Niedźwiecki M.: On the concept of estimation memory in adaptive filtering Bulletin of the Polish Academy of Sciences, Technical Sciences, pp. 229-235, Vol.50, 2002
32. Niedźwiecki M., Klaput T.: Fast recursive basis function estimators for identification of time-varying processes IEEE Transactions on Signal Processing, pp. 1925-1934, 2002. [regular]
33. Niedźwiecki M., Klaput T.: Fast algorithms for identification of periodically varying systems IEEE Transactions on Signal Processing (accepted for publication), 2003 [regular]
34. Niedźwiecki M., Klaput T., Fast algorithms for identification of periodically – varying system IEEE Transactions on Signal Processing, 2003, vol. 51, no. 12, pp. 3270-3279
35. Niedźwiecki M., Kaczmarek P.: Estimation and tracking of complex periodically varying systems Automatica, 2005, vol. 49, pp. 1503-1516
36. Niedźwiecki M., Kaczmarek P.: Generalized adaptive notch and comb filters for identification of quasi-periodically varying systems IEEE Transactions on Signal Processing, 2005, Vol. 53, no 12, pp. 4599-4609
37. Niedźwiecki M., Kaczmarek P.: Identification of quasi-periodically varying systems using the combined nonparametric/parametric approach IEEE Transactions on Signal Processing, 2005, vol. 53, no 12, pp. 4588-4598
38. Niedźwiecki M., Kaczmarek P.: Tracking Analysis of a Generalized Adaptive Notch Filter IEEE Transactions on Signal Processing, vol. 54, No.1, 2006, pp. 304-314
39. Niedźwiecki M., Kaczmarek P.: Generalized Adaptive Notch Filter with a Self-optimization Capability IEEE Transactions on Signal Processing, vol. 54, No. 11, 2006, pp. 4185-4193
40. Niedźwiecki M., Sobociński A., Generalized adaptive notch filters with frequency debiasing for tracking of polynomial phase systems Automatica vol. 43 (2007), pp.128-134
41. Niedźwiecki M., Sobociński A., A simple way of increasing estimation accuracy of generalized adaptive notch filters IEEE Signal Processing Letters, Vol. 14, NO. 3, March 2007
42. Niedźwiecki M., Sobociński A., On Tracking Properties of Real-Valued Generalized Adaptive Notch Filters IEEE Transactions on Signal Processing, 2007, vol. 55, no 5, pp. 1688-1695
43. Ceranka Sz., Niedźwiecki M., System lokalizacji dla niewidomych, Elektronika, nr 9/2007, pp. 71-72
44. Niedźwiecki M., Sobociński A.: Generalized adaptive notch smoothers for real-valued signals and systems, IEEE Transactions on Signal Processing. - Vol. 56, nr 1 (2008), s. 125-133
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47. Niedźwiecki M.: On "cheap smoothing" opportunities in identification of time-varying systems, *Automatica*. - Vol. 44, nr 5 (2008), s. 1191-1200
48. Niedźwiecki M.: Optimal and suboptimal algorithms for identification of time-varying systems with randomly drifting parameters, *Automatica*. - Vol. 44, nr 7 (2008), s. 1718-1727
49. Niedźwiecki M., Kaczmarek P., A.: Variable-structure algorithm for identification of quasiperiodically varying systems, *Recent Advances in Control and Automation / eds: K. Malinowski, L. Rutkowski/ Academic Publishing House EXIT, 2008, (Challenging Problems of Science, Control and Automation), s. 242-251*
50. Niedźwiecki M., Kaczmarek P.: Self-optimizing generalized adaptive notch filters comparison of three optimization strategies, *Automatica*, vol. 45, 2009, pp. 68-77
51. Niedźwiecki M., Meller M., Self-Optimizing Adaptive Vibration Controller, *IEEE Transactions on Automatic Control*, Vol. 54, No. 9, 2009, pp. 2087-2099
52. Niedźwiecki M., Meller M.: A New Approach to Active Noise and Vibration Control - Part I: The Known Frequency Case, *IEEE Transactions on Signal Processing*, Vol. 57, No. 9, 2009, pp. 3373-3386
53. Niedźwiecki M., Meller M.: A New Approach to Active Noise and Vibration Control - Part II: The Unknown Frequency Case, *IEEE Transactions on Signal Processing*, Vol. 57, No. 9, 2009, pp. 3387-3398
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55. Niedźwiecki M., Generalized Adaptive Notch Smoothing Revisited, *IEEE Transactions on Signal Processing*, Vol. 58, No. 3, 2010, pp.1565-1576
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#### **D) Conference Papers**

1. Niedźwiecki M., On the problem of choice of best approximating models for a certain class of stochastic systems (in Polish), 8th Polish Control Conference, Szczecin, Poland, pp. 321-326, Sept. 1980
2. Niedźwiecki M., On the extension of Akaike's final prediction error criterion to systems with slowly varying coefficients 1st European Signal Processing Conference EUSIPCO-80, Lausanne, Switzerland, Sept. 1980
3. Niedźwiecki M., Local modelling of nonstationary stochastic systems using exponential forgetting techniques 1st IASTED Applied Simulation and Modelling Conference, Lyon, France, Sept. 1981.
4. Niedźwiecki M., On the localized estimators and generalized Akaike's criteria 20th IEEE Conference on Decision and Control, San Diego, USA, pp. 56-61, Dec. 1981
5. Niedźwiecki M., Bayesian-like autoregressive spectrum estimation in the case of unknown process order 23rd IEEE Conference on Decision and Control, Las Vegas, USA, pp. 983-988, Dec. 1984
6. Niedźwiecki M., Bayesian estimation of a spectrum of a nonstationary autoregressive process 6th International Conference on Analysis and Optimization of Systems, Nice, France; *Lecture Notes in Control and Information Sciences*, Springer-Verlag, vol. 62, pp. 24-38, June 1984
7. Lisowski A., Morawski L., Gierusz W., Niedźwiecki M., Safe-steering of the ship's motion - further notes on the optimal, adaptive and game-differential control strategies 14th International Seminar on the Ship's Hydrodynamics, Varna, Bułgaria, pp. 16.1-16.10, June 1985
8. Niedźwiecki M., On the choice of the window shape in weighted least squares identification of a class of nonstationary systems 17th International Symposium on Stochastic Systems Theory and Its Applications, Kyoto, Japan, pp. 79-82, Nov. 1985
9. Niedźwiecki M., On time and frequency characteristics of weighted least squares estimators applied to nonstationary system identification 24th IEEE Conference on Decision and Control, Fort Lauderdale, USA, pp. 225-230, Dec. 1985
10. Niedźwiecki M., Self-tuning minimum-variance regulators with adaptive determination of the model order 24th IEEE Conference on Decision and Control, Fort Lauderdale, USA, pp. 1209-1214, 1985
11. Niedźwiecki M., Optimization of the window shape in weighted least squares identification of a class of nonstationary systems 7th International Conference on Analysis and Optimization of Systems,

- Antibes, France; Lecture Notes in Control and Information Sciences, Springer-Verlag, pp. 889-901, June 1986
12. Niedźwiecki M., On tracking properties of localized estimators 3rd European Signal Processing Conference EUSIPCO-86, Hague, The Netherlands, pp. 1083-1086, Sept. 1986
  13. Niedźwiecki M., Functional series modelling approach to identification of nonstationary stochastic systems 1987 American Control Conference, Minneapolis, USA, pp. 1143-1148, June 1987
  14. Niedźwiecki M., Functional series modelling identification of nonstationary stochastic systems - the clipping technique 1st IAESTED Symposium on Signal Processing and Its Applications, Brisbane, Australia, pp. 321-326, Aug. 1987
  15. Niedźwiecki M., Recursive functional series modelling estimators for adaptive control of time-varying plants 26th IEEE Conference on Decision and Control, Los Angeles, USA, pp. 1239-1244, Dec. 1987
  16. Niedźwiecki M., Steady state and parameter tracking properties of self-tuning minimum variance regulators 1988 IFAC Workshop on Robust Adaptive Control, Newcastle, Australia, pp. 206-211, Sept. 1988
  17. Niedźwiecki M., Kowalczyk Z., Improving parameter tracking properties of finite-memory adaptive filters 4th European Signal Processing Conference EUSIPCO-88, Grenoble, France, pp. 799-802, Sept. 1988
  18. Niedźwiecki M., Identification of nonstationary stochastic systems using parallel estimation schemes 27th IEEE Conference on Decision and Control, Austin, USA, pp. 258-265, Dec. 1988
  19. Niedźwiecki M., Identification of nonstationary stochastic systems using combined parameter estimation and filtering 1989 Australian Symposium on Signal Processing and Applications, Adelaide, Australia, pp. 309-313, Apr. 1989
  20. Niedźwiecki M., Fast adaptive filters for identification and tracking of multifrequency harmonic signals 1989 Australian Symposium on Signal Processing and Applications, Adelaide, Australia, pp. 268-272, Apr. 1989
  21. Niedźwiecki M., Guo L., Nonasymptotic results for finite-memory WLS filters 28th IEEE Conference on Decision and Control, Tampa, USA, Dec. 1989
  22. Moore J.B., Niedźwiecki M., Lige Xia: Identification/prediction algorithms for ARMAX models with relaxed positive real conditions Proc. International Symposium on the Mathematical Theory of Networks and Systems MTNS-89, Amsterdam, The Netherlands, vol. 1, pp. 463-469, June 1989.
  23. Niedźwiecki M., Multiple-model approach to finite memory adaptive filtering 11th IFAC World Congress, Tallinn, Soviet Union, July 1990
  24. Niedźwiecki M., R. Kennedy: Non-linear non-causal noise rejection schemes based on competitive smoothing 5th European Signal Processing Conference, Barcelona, Spain, Sept. 1990
  25. Kennedy R., Niedźwiecki M., James B.: Non-linear smoothing technique for discontinuous signals buried in noise Australian Symposium on Signal Processing, Brisbane, April 1990
  26. Niedźwiecki M.: Identification of time-varying systems with abrupt parameter changes 9th IFAC/IFORS Symposium on Identification and System Parameter Estimation, Budapest, Hungary, pp. 1718-1723, July 1991
  27. Niedźwiecki M.: On a new method of identification of abruptly changing dynamic systems (in Polish), 11th Polish Control Conference, Białystok - Białowieża, Poland, pp. 527-534, Sept. 1991
  28. Niedźwiecki M., Sethares W.: New filtering algorithms based on the concept of competitive smoothing 23rd International Symposium on Analysis of Stochastic Systems and its Applications, Osaka, Japan, pp. 129-132, Nov. 1991
  29. Niedźwiecki M.: On statistical reconstruction of random fields and the art of forgery 31st IEEE Conference on Decision and Control, Tucson, USA, pp. 3293-3298, Dec. 1992
  30. Niedźwiecki M.: Parallel estimation using postfiltering, 2nd European Control Conference, Groningen, The Netherlands, pp. 1862-1865, June-July 1993
  31. Niedźwiecki M., Cisowski K.: Adaptive scheme for elimination of background noise and impulsive disturbances from audio signals, Quatrozieme Colloque GRETSI, Juan-les-Pins, France, pp. 519-522, 1993
  32. Niedźwiecki M.: On adaptive control in the presence of impulsive measurement noise 1994 American Control Conference, Baltimore, USA, pp. 80-83, June-July 1994
  33. Niedźwiecki M.: Recursive algorithm for elimination of measurement noise and impulsive disturbances from ARMA signals 7th European Signal Processing Conference EUSIPCO-94, Edinburgh, UK pp. 1289-1292, September 1994

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35. Niedźwiecki M., Suchomski P.: Application of the method of competitive smoothing to image processing (in Polish), 12th Polish Control Conference, Gdynia, Poland, pp. 151-157, September 1994
36. Niedźwiecki M., Cisowski K.: Application of the extended Kalman filter to restoration of archive audio recordings (in Polish), 2nd Symposium on New Techniques in Audio Processing, Wrocław, Poland, pp. 71-78, 1995
37. Niedźwiecki M., Suchomski P.: On parallel estimation approach to adaptive filtering 18th National Conference on Circuit Theory and Electronic Networks, Polana Zgorzelisko, Poland, pp. 437-442, 1995
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65. Niedźwiecki M., Kaczmarek P.: Signal tracking properties of a class of adaptive notch filters Proc. 13th European Signal Processing Conference, EUSIPCO 2005, Antalya, Turkey, MonAmOR7, pp.1-4
66. Niedźwiecki M., Kaczmarek P.: Generalized adaptive notch filters – does gradient smoothing technique help? Proc. 44th IEEE Conference on Decision and Control and European Control Conference 2005, Sevilla, Spain, pp. 5814-5819
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83. Meller M., Niedźwiecki M., An Improved Frequency Estimator For an Adaptive Active Noise Control Scheme, 18th European Signal Processing Conference (EUSIPCO-2010), Aalborg, Denmark, August 23-27, 2010, pp. 353-357
84. Niedźwiecki M., Gackowski Sz., Medley Filters – Simple Tools For Efficient Signal Smoothing, 18th European Signal Processing Conference (EUSIPCO-2010), Aalborg, Denmark, August 23-27, 2010, pp. 641-645
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