

LIST of PUBLICATIONS by N. Ermolova

1. Articles in international scientific journals with referee practice

- [1] N. Y. Ermolova, "Analysis of OFDM error rates over nonlinear fading channels," *IEEE Trans. Wireless Commun.*, vol. 9, no. 6, pp. 1855-1860, June 2010.
- [2] G. P. Efthymoglou, N. Y. Ermolova, and V. A. Aalo, "Channel capacity and average error rates in generalized $-K$ fading channels," *IET Commun.*, vol. 4, no. 11, pp. 1364-1372, July 2010.
- [3] N.Y. Ermolova and O. Tirkkonen, "Theoretical characterization of memory polynomial models with Gaussian inputs," *IEEE Signal Process. Lett.*, vol. 16, no. 8, pp. 651-654, Aug. 2009.
- [4] N.Y. Ermolova, "Useful integrals for performance evaluation of communication systems in generalized 'eta'- 'mu' and 'kappa'-'mu' fading channels," *IET Communications*, vol. 3, no. 2, pp. 303-308, Feb. 2009.
- [5] N.Y. Ermolova, "Average symbol error probability of arbitrary rectangular quadrature amplitude modulation in generalised shadowed fading channels," *IET Communications*, vol. 2, no. 7, pp. 903-908, July 2008.
- [6] N.Y. Ermolova, "Moment generating functions of the generalized 'eta'- 'mu' and 'kappa'- 'mu' distributions and their applications to performance evaluation of communication systems," *IEEE Commun. Lett.*, vol. 12, no. 7, pp. 502-504, July 2008.
- [7] N. Y. Ermolova and B. Makarevitch, "Practical Approaches to Adaptive Resource Allocation in OFDM Systems," *EURASIP Journal on Wireless Communications and Networking*, vol. 2008, Article ID 160307, 10 pages, 2008. doi:10.1155/2008/160307 .
- [8] N. Y. Ermolova "On a useful property of the complementary error function," *European Trans. Telecommun.*, vol. 19, no.2, pp. 149-154, March 2008.
- [9] N.Y. Ermolova and B. Makarevitch: "On subchannel inversion for improvement of power efficiency in OFDM-based systems," *IET Communications*, vol. 1, no.6, pp. 1263-1266, June 2007.
- [10] N.Y. Ermolova and B. Makarevitch, "Low complexity power and subcarrier allocation for OFDMA," *IEEE Trans. Wireless Commun.*, vol.6, no.2, pp.433-437, Feb. 2007.
- [11] N.Y. Ermolova, "Nonlinear amplifier effects on clipped-filtered multicarrier signals," *IEE Proc.-Commun.*, vol. 153, no. 2., pp. 213-218, April 2006.
- [12] N. Ermolova and P. Vainikainen, "Analysis of nonlinear amplifiers with Gaussian input signals on the basis of complex gain measurements," *Europ. Trans. Telecommun.*, vol. 15, no. 5 , pp. 501-505, Sep.-Oct. 2004.
- [13] N.Y. Ermolova, "On the statistical properties of specially constructed M-QAM sequences in nonlinear radio channels," *IEEE Commun. Letters*, vol.8, no.6 , pp. 354-355, June 2004.
- [14] N. Ermolova and P. Vainikainen, "On modelling nonlinear microwave power amplifiers in multi-carrier transmission systems," *Europ. Trans. Telecommun.*, vol.15, no.1, pp. 1-6, Jan.-Febr. 2004.
- [15] N.Y. Ermolova, "Kalman filter application for mitigation of nonlinear effects in multicarrier communication systems," *IEE Proc.-Commun.*, vol. 150, no.4, pp. 265-268, 2003.
- [16] N.Y. Ermolova, and P. Vainikainen " On the relationship between peak factor of a multi-carrier signal and aperiodic autocorrelation of the generating sequence," *IEEE Commun. Letters*, vol. 7, no. 3, pp. 107-108, March 2003.
- [17] N.Y. Ermolova " Spectral analysis of a nonlinear amplifier based on the complex gain Taylor series expansion," *IEEE Commun. Letters*, vol.5, no. 12, pp. 465-467, Dec. 2001.

[18] N.Ermolova “Comments on “Comments on Peak Factor of Sampled and Continuous Signals,” *IEEE Commun. Letters*, vol. 5, no. 3, p. 77, March 2001.

2. Articles in intern. conference proceedings with referee practice

[1] N.Y. Ermolova and O. Tirkkonen, “Analysis of joint effect of nonlinear amplification and I/Q imbalance in OFDM transmission,” to be presented on *IEEE PIMRC 2010*, Sept. 2010, also a session chair.

[2] N.Y. Ermolova, “A technique for mitigation of both nonlinear and frequency offset effects in OFDM-based systems,” *Proc. IEEE Eurocon 2009*, St. Pet., Russia, May 18-23 2009.

[3] N.Y. Ermolova, “Spectral analysis of a memory RF power amplifier with Gaussian inputs,” *Proc. IEEE WTS*, Prague, Czech Republic, April 22-24, 2009.

[4] N.Y. Ermolova and O. Tirkkonen, “Nonlinear amplification effects on OFDM error rate performance in fading environment,” *Proc. IEEE VTC 2009* (Spring), Barcelona, Spain, April 26-29, 2009

[5] N.Y. Ermolova and O. Tirkkonen, “OFDM interference analysis in nonlinear time-varying channels with frequency offsets”, *Proc. IEEE PIMRC-08*, Cannes, France, Sept.15-18, 2008.

[6] N.Y. Ermolova and B. Makarevitch, " Power loading for OFDM with incomplete channel state information," *Proc. IEEE PIMRC'07*, Athens, Greece, Sept.3 -7, 2007.

[7] N.Y. Ermolova and B. Makarevitch, " Performance of practical subcarrier allocation schemes for OFDMA," *Proc. IEEE PIMRC'07*, Athens, Greece, Sept.3 -7, 2007.

[8] N.Y. Ermolova, “Characterization of an ideally predistorted power amplifier driven by a clipped-filtered multicarrier signal,” *Proc. IEEE VTC -07(Spring)*, Dublin, Ireland, April 23-25, 2007, pp.2846-2849.

[9] N.Y. Ermolova, “OFDM Equalization in Nonlinear Time-varying channels,” *Proc. IEEE ISWCS'06*, Valencia, Spain, Sept. 5-8, 2006.

[10] N.Y. Ermolova, “Low Complexity Power Loading Strategies in OFDM-based Transmission Systems,” *Proc. IEEE PIMRC'06*, Helsinki, Finland, Sept.11-14, 2006.

[11] N.Y.Ermolova and B. Makarevitch, “Power and subcarrier allocation algorithms for OFDMA systems,” *Proc. IEEE PIMRC 2005*, Berlin, Germany, Sept. 11-14, 2005.

[12] N.Y.Ermolova, “M-QAM OFDM in presence of nonlinear and frequency offset effects,” *Proc. IEEE PIMRC 2005* Berlin, Germany, Sept. 11-14, 2005.

[13] N.Y. Ermolova and S.-G. Haggman, “ Simplified bounds for the complementary error function; application to the performance evaluation of signal-processing systems,” *Proc. 12 European Signal Proces. Conf.* , Vienna, Austria, Sept. 6-10, 2004, pp. 1087- 1090.

[14] N.Y. Ermolova, N. Nefedov and S.-G. Haggman, “An iterative method for nonlinear channel equalization in OFDM systems”. *Proc. of IEEE PIMRC-04*, Barcelona, Spain, Sept.5-8,2004.

[15] N.Y. Ermolova and S.-G. Haggman, “An extension of Bussgang’s theory to complex-valued signals,” *Proc. Norsig-04*, Espoo, Finland, June 10-11, 2004, pp. 45-48, also a chair of ‘Nonlinear signal processing’ session.

[16] H.-L. Määttänen, N.Y. Ermolova, and S.-G. Häggman, “Nonlinear amplification of clipped-filtered multicarrier signals,” *Proc. IEEE VTC 2005*, Stockholm, Sweden , June 2005, pp. 958-962.

- [17] N.Ermolova "A linear algorithm for the noise shrinkage in communication systems with Gaussian nonstationary inputs," Proc. *5-st Intern. Conf. "Digital signal processing and its applications"*, Moscow, Russia, 12-14 March 2003, pp. 305-309.
- [18] N.Y.Ermolova "New companding transform for reduction of peak-to-average power ratio," Proc. *IEEE VTC (Fall)2002*, Vancouver, Canada, 24-28 Sept. 2002, vol. 3, pp. 1404-1407.
- [19] N. Ermolova "A comparison of two schemes for peak-to-average power ratio reduction in a multicarrier transmission," Proc. *1-st IEEE Intern. Conf. On Curcuits and Systems in Communication*, St. Petersburg, Russia, 26-28 June 2002, pp. 102-105.
- [20] N. Ermolova "Analysis of nonlinear effects in OFDM communications systems," Proc. *IEEE VTC (Spring) 2001*, Greece, May 6-9, pp. 737-740 (also a chair of 'OFDM' session).
- [21] N. Ermolova "Using multilayered neural networks for adaptive microwave amplifier linearization," *Proc. 4th International Symposium on Multi-Dimensional Mobile Communications 2001*, Finland, Pori, June 11-12, 2001, pp. 244-249.

3. Articles in Finnish scientific conference proceedings

- [22] N. Ermolova " Multiple signal intermodulation in the nonlinear radio devices", Proc. *XXV URSI National Convention*", Helsinki, Sept. 2000, pp. 96-97.
- [23] N. Ermolova "Using complex transfer characteristics for analysis of microwave amplifiers", Proc. *of 2-nd Finnish wireless communication workshop*, Tampere, Oct. 23-24, 2001, pp. 98-101.
- [24] N. Ermolova " On a power amplifier back-off design in an OFDM system", Proc. *of Finnish wireless communication workshop 2002*, Espoo, May, 2002.

4. Other scientific publications

- [1] N.Ermolova "HUT Radio Laboratory Report", confidential, 2000, 32 p.
- [2] N.Ermolova "HUT Radio Laboratory Report", confidential, 2001, 23 p.
- [3] N.Y. Ermolova " Spectral definition for not absolutely integrable signals", *Radio Engineering and Electronics*, 1995, no. 1-2 (in Russian).
- [4] N.Y. Ermolova " Special cases of spectrum definition", in *Proc. of the Air Military Academy*, Moscow 1994 (in Russian).
- [5] N. Ermolova " Radio receiver for impulse sequences with pseudo stochastic intervals between impulses" USSR Inventor's sertificare # 1338091.