

## Dr. Bernd-Peter Paris

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- CURRENT POSITION** Associate Professor, Department of Electrical and Computer Engineering, George Mason University, since 1991.
- INDUSTRY EXPERIENCE** ECUTEL, Inc., Alexandria, VA: Chief Scientist responsible for design and development of a commercial Mobile VPN product, technical oversight of a team of 10 developers, technical representation of company to prospective customers and investors, 1999–2000 (during sabbatical).  
SIEMENS AG in Munich, Germany: Systems Engineering for Base Stations for GSM networks, 1990–1991.
- EDUCATION** Ph.D. in Electrical & Computer Engineering, Rice University, Houston, Texas, July 1990, with a thesis entitled, “*On the Capacity of Infinite Population Random Multiple Access Collision Channels.*” Advisor: B. Aazhang.  
‘Diplom-Ingenieur’ with highest honors in Electrical Engineering, Ruhr-Universität Bochum, Bochum, West-Germany, June 1986.
- AWARDS, HONORS, AND MEMBERSHIPS** Outstanding Teaching Award, School of Information Technology & Engineering, George Mason University, 2001.  
Fulbright Travel Grant, 1986–87.  
‘Preis der Ruhr-Universität Bochum’ for the best thesis in Electrical Engineering, 1986.  
‘Preis des VDE-Bezirksvereins Rhein-Ruhr’ for outstanding graduates in Electrical Engineering, 1986.  
Eta Kappa Nu Honor Society, 1987.
- RESEARCH INTERESTS** *Communication Networks*; including mobility management in wireless communication networks, mobile ad hoc and peer-to-peer networks, and random multiple-access control.  
*Communication Theory*; including code-division multiple-access and communication over unknown or changing channels with applications to mobile communication systems.  
*Statistical Signal Processing*; including detection in non-Gaussian noise.



## PUBLICATIONS

- Journal Articles*
- B.-P. Paris, "Finite-Precision Decorrelating Receivers for Multi-User CDMA Communication Systems," *IEEE Transactions on Communications*, April 1996.
- G.C. Orsak, B.-P. Paris, "On the Relationship between Measures of Discrimination and the Performance of Suboptimal Detectors," *IEEE Transactions on Information Theory*, January 1995.
- B.-P. Paris, B. Aazhang, "Near-Optimum Control of Multiple Access Channels," *IEEE Transactions on Communications*, August 1992.
- B. Aazhang, B.-P. Paris, G.C. Orsak, "Neural Net Receivers in Spread-Spectrum Multiple-Access Communications," *IEEE Transactions on Communications*, July 1992.
- B.-P. Paris and A.R. Shah, "On Self-Adaptive Maximum-Likelihood Sequence Estimation: Part I – Reliable, Blind Distinction between Two Sequences," submitted to *IEEE Transactions on Communications*.
- B.-P. Paris and H. Chen, "Ring Decision Feedback Blind Channel Equalization," submitted to *IEEE Transactions on Communications*.
- Contributions to Books*
- B.-P. Paris, "Convolution," invited book chapter in *Wiley Encyclopedia of Electrical and Electronics Engineering*, Vol. 4, Wiley Interscience, J.G. Webster (Ed.), 1999.
- B.-P. Paris, "Access Methods," invited book chapter in *The Mobile Communications Handbook* and *The Communications Handbook*, CRC Press, J. Gibson (Ed.), 1995 and 1996, respectively. The second edition of the *The Mobile Communications Handbook* was published in 1999.
- B.-P. Paris, G. Orsak, M.K. Varanasi, B. Aazhang, "Neural Net Receivers in Spread-Spectrum Multiple-Access Communication Systems," in *Advances in Neural Information Processing Systems I*, pp. 272–280, David S. Touretzky, Ed., San Mateo, CA: Morgan Kaufmann Publishers, 1989.
- Conference Papers*
- S. Xing and B.-P. Paris, "Importance Sampling for Measuring the Size of the Internet," *Proceedings of the 2001 Conference on Information Sciences and System*, Baltimore, MD, March 2001.
- S. Sud and B.-P. Paris, "Characterizing the performance of a Two-User System through a Dispersive Channel," *MILCOM 2000*, Los Angeles, CA, October 2000.
- J. Herman and B.-P. Paris, "A New Approach to the Blind Subspace Separation and Diversity Combining of MIMO-FIR Channels," *Proceedings of the 1999 Conference on Information Sciences and Systems*, Baltimore, MD, March 1999.
- A.R. Shah and B.-P. Paris, "Self-Adaptive Sequence Detection via the M-Algorithm," *1998 MPRG Conference*, Blacksburg, VA, 1998.
- B.-P. Paris and H. Chen, "Nonlinear Blind Channel Equalization via Ring Decision Feedback", *1998 International Symposium on Information Theory*, Cambridge, MA, August 1998.

- H. Chen and B.-P. Paris, "K-Look-Ahead Sliding (KLAS) Window Algorithms for Blind Equalization," *Proceedings of the 1998 Conference on Information Sciences and Systems*, Princeton, NJ, March 1998.
- N. Warke, G. C. Orsak, B.-P. Paris and H. Chen, "Universal Modulation Classification for Unknown Non-Gaussian Dispersive Channels," *Proceedings of the 1997 Conference on Information Sciences and Systems*, Baltimore, MD, March 1997.
- G.C. Orsak and B.-P. Paris, "Modulation Classification in Unknown Dispersive Environments," *ICASSP 97*, Munich, Germany.
- A.R. Shah and B.-P. Paris, "Robust Detectors for Self-Adaptive Sequence Detection," *The International Workshop on Mobile, Communications*, Thessaloniki, Greece, September, 1996.
- W.G. Evans and B.-P. Paris, "Channel Sharing for Cellular Networks," *Proceedings of the 1996 Conference on Information Sciences and Systems*, Princeton, NJ, March 1996.
- A.R. Shah and B.-P. Paris, "Robust Detectors for Distinguishing between Two Signals in Unknown Dispersive (ISI) Channels," *Proceedings of the 1996 Conference on Information Sciences and Systems*, Princeton, NJ, March 1996.
- A.R. Shah and B.-P. Paris, "Tree Search Algorithms for Self-Adaptive Maximum-Likelihood Sequence Estimation," *1995 International Symposium on Information Theory*, Whistler, Canada, September 1995.
- B.-P. Paris and A.R. Shah, "Matched Subspace Detectors for Distinguishing between Two Signals with Extensions to Blind Maximum-Likelihood Sequence Estimation," *Twenty-Ninth Annual Conference on Information Sciences and Systems*, Baltimore, MD, March 1995.
- B.-P. Paris, "Finite Precision Decorrelating Receivers for Multi-User CDMA Communication Systems," *1994 International Symposium on Information Theory*, Trondheim, Norway, June 1994.
- B.-P. Paris, "Self-Adaptive Maximum-Likelihood Sequence Estimation," *1994 International Symposium on Information Theory*, Trondheim, Norway, June 1994.
- B.-P. Paris, "Finite Precision Decorrelating Receivers for Multi-User CDMA Communication Systems," *Proceedings of the 1994 Conference on Information Sciences and Systems*, Princeton, NJ, March 1994.
- B.-P. Paris, "Self-Adaptive Maximum-Likelihood Sequence Estimation," *Communication Theory Mini-Conference in connection with GLOBECOM '93*, Houston, TX, November 1993.
- B.-P. Paris, "Asymptotic Properties of Self-Adaptive Maximum-Likelihood Sequence Estimation," *Twenty-Seventh Annual Conference on Information Sciences and Systems*, Baltimore, MD, March 1993.
- G.C. Orsak, B.-P. Paris, "On the Relationship between Suboptimal Detectors and Measures of Discrimination," *1993 International Symposium on Information Theory*, San Antonio, TX, January 1993.

B.-P. Paris, "Increased Throughput in Multiple-Access Control Algorithms with Binary Feedback Through Non-Sequential Collision Resolution," *Twenty-Sixth Annual Conference on Information Sciences and Systems*, Princeton, NJ, March 1992.

B.-P. Paris, B. Aazhang, "Near-Optimum Control of Multiple Access Collision Channels," *29th IEEE Conference on Decision and Control*, Honolulu, HI, December 1990.

B.-P. Paris, B. Aazhang, "A Collision Resolution Algorithm Involving Combinations of Sets of Previously Collided Packets," *Twenty-Fourth Annual Conference on Information Sciences and Systems*, Princeton, NJ, March 1990.

B.-P. Paris, G.C. Orsak, M.K. Varanasi, B. Aazhang, "Neural Net Receivers in Spread-Spectrum Multiple-Access Communication Systems," *1988 IEEE Conference on Neural Information Processing—Natural and Synthetic*, Denver, CO, November 1988.