Michael L. Honig

Curriculum Vitae, November 2016

Academic Title: Professor
Department of Electrical Engineering & Computer Science
Northwestern University
Evanston, IL 60208
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Education

Ph.D. in Electrical Engineering
University of California, Berkeley, May 1981

M.S. in Electrical Engineering
University of California, Berkeley, May 1978

B.S. with Honors in Electrical Engineering
Stanford University, May 1977

Professional Experience

Since 10/94 **Professor**
Department of Electrical & Computer Engineering
Northwestern University, Evanston, IL
Teaching and research in communications, networks, and signal processing.

Feb-May 2016 **Visiting Scholar**
Institute for Network Coding
Chinese University of Hong Kong

April 2012 **Visiting Scholar**
CSIRO Information Communication and Technology Centre
Marsfield, New South Wales, Australia

Summers 2007-10 **Visiting Humboldt Scholar**
School of Electrical Engineering and Information Technology
Technical University of Munich

Professional Experience (cont.):

Fall 2004	**Visiting Fellow** Department of Electrical Engineering Princeton University
Fall 2000	**Visiting Scholar** Department of Electrical Engineering & Computer Science University of California, Berkeley
8/99, 8/01	**Visiting Scholar** Sydney University (also 9/97) and Southen Poro Communications Sydney, Australia
6-9/96	**Summer Faculty** NRaD (Naval Research and Development facility) San Diego, Ca.
6-9/96	**Visiting Scholar** University of California, San Diego (Joint appointment with NRaD)
11/83-10/94	**Member of Technical Staff** Computing and Communications Research Department Bellcore, Morristown, New Jersey
7/81-11/83	**Member of Technical Staff** Data Theory Group, Bell Laboratories Holmdel, New Jersey

Consulting

7/10-1/16	*Nokia Solutions and Networks* (previously *Motorola*) Design and analysis of algorithms for cellular networks.
8/09-2/11	*WiLan vs. LG*: Expert consultant for LG
5/07-8/08	*Agere vs. Sony*: Expert witness for Sony. The case was concerned with a CDMA patent for 802.11b.
4/06-4/07	*Broadcom vs. Qualcomm*: Expert witness for Broadcom. The case was concerned with patents for UMTS (CDMA) receivers.

Consulting (cont.):

6/02-10/03 *In-Flight vs. AT&T*: Expert witness for AT&T.
The case was concerned with an air-to-ground communication system.

Various activities in the area of wireless communications and signal processing for Motorola, SAIC, University of Chicago, and Ameritech.

Honors and Awards

Distinguished speaker, Singapore University of Technology and Design, March 2014

IEEE Information Theory Society Board of Governors, 1996--2002, 2012-2015

Booz Allen distinguished colloquium speaker
ECE Department, University of Maryland, College Park (Nov. 2012)

2012 IEEE WCNC best paper award -- MAC and Cross-Layer Design
(with C. Shi, S. Nagaraj, and P. Fleming)

2010 Marconi prize paper award (IEEE Communications Society)
(with Y. Zhu, D. Guo)

Humboldt Research Award for Senior U.S. Scientists (2007)
(Alexander von Humboldt Foundation)

Visiting Wei Lun professor, Chinese University of Hong Kong (2008)

Included in ISI list of highly cited researchers.

2002 IEEE Communications Society and Information Theory Society
Joint Paper Award (with W. Xiao)

Fellow of IEEE, 1997

Ameritech Professor of Information Technology
Department of Electrical & Computer Engineering
Northwestern University, 9/1/94-8/31/97

Regents Fellowship
University of California, Berkeley, 1977

F.E. Terman Award for Academic Excellence, 1976

Research Interests

Wireless and multiuser communications/networks

Signal processing, adaptive filtering

Data communications networks;
Modeling, performance analysis, and simulation of networks and distributed systems

Modeling of macro-economic systems

Courses Taught

At Northwestern:
Wireless Communications (EECS 380), Analog Communications (EECS 307), Digital Communications (EECS 478), Information Theory (EECS 428), Adaptive Filters (EECS 463), Wireless Technologies (for MSIT program), Engineering Analysis (Gen_Eng 205-1)

Topics in Signal Processing
Technical University of Munich, Summer 2014

Topics in Digital Communications
Technical University of Munich, Summer 2007

Wireless Communications (EECS 290S)
University of California, Berkeley, Fall 2000

Signal Analysis and Communications Systems (EE 485)
Visiting Lecturer (Professor), Princeton University, Fall 1993

Advances in Coding and Equalization for Bandlimited Channels
Short course given at the Universidad Polytecnica de Madrid, Jan. 1991

Selected Topics in Adaptive Filtering and Data Communications
Short course given at Tsing Hua University, Beijing, China, July 1988

Professional Activities

Member, IEEE Information Theory Society awards committee (2014-2015)

Member, advisory board, NSF Center for the Science of Information (2013)

Member, IEEE Fellow Committee for the Information Theory Society (2008-11)

Member, IEEE Information Theory Society awards committee (2008)

Member, National Research Council committee
R&D strategies to improve surface transportation security

National Science Foundation panel member
Various panels related to signal processing and communications

Editorships, Conference Committees

Tutorials chair, Wireless Communications and Networking Conference, 2017

Co-organizer (with R. Berry), session on "Heterogeneous Networks",
Communication Theory Workshop, Dana Point, Ca., May 2015.

Panel organizer and moderator: "Spectrum Management and Policy",
IEEE Globecom 2013, Atlanta, Georgia.

Technical Program Committee Co-Chair (with A. Guillen i Fabregas and A. Orlitsky),
2013 IEEE Information Theory Workshop, Sevilla, Spain

Co-chair (with Randall Berry), 2012 IEEE Communication Theory Workshop

Co-chair (with Randall Berry, Rakesh Vohra), Spectrum Markets Workshop,
Northwestern University, June 2011.

Guest Editor,
Journal of Selected Areas in Signal Processing
Special issue on "Performance Limits of Ultra-Wideband Systems", October 2007.

Editor, *Foundations and Trends in Communications and Information Theory*
(since 2003)

Editor for Communications
IEEE Transactions on Information Theory, 9/97-10/00

Editor for Communication Theory
IEEE Transactions on Communications, 10/90-10/95

Guest Editor
European Transactions on Telecommunications
Focus on "Signal Processing for DS-CDMA", Sept/Oct 1998

Editorships, Conference Committees (cont.):

Guest Editor
Wireless Personal Communications: An International Journal
Special issue: *Interference in Mobile Wireless Systems,* Nov 1997.

Guest Editor
European Transactions on Telecommunications
Focus on "Economics of Telecommunications", July-August 1995

Digital Signal Processing Technical Committee, 1993-1996
IEEE Signal Processing Society

Program Committee Member
2016 International ITG Workshop on Smart Antennas
2016 Iran Workshop on Communication and Information Theory
2015 Iran Workshop on Communication and Information Theory
2014 International Symposium on Information Theory
2012 International Symposium on Information Theory
2011 International Symposium on Modeling and Optimization in Mobile, Ad-hoc and Wireless Networks (WiOpt)
2010 Military Communications Conference
2010 International Conference on Communications
2009 Information Theory Workshop
2009 International Symposium on Modeling and Optimization in Mobile, Ad-hoc and Wireless Networks (WiOpt)
2008 International Symposium on Information Theory
2008 International Symposium on Modeling and Optimization in Mobile, Ad-hoc and Wireless Networks (WiOpt)
2007 Workshop on Resource Allocation in Wireless NETworks (RAWNET)
2006 International Symposium on Information Theory
2006 International Symposium on Modeling and Optimization in Mobile, Ad-hoc and Wireless Networks (WiOpt)
2006 International Conference on Communications
2005 Signal Processing Advances for Wireless Communications
2004 International Symposium on Information Theory
2003 Baiona Workshop on Signal Processing in Communications
2000 International Symposium on Information Theory
2000 Conference on Communications and Information Sciences and Systems
2000 IEEE Singapore International Conference on Communication Systems
1999 Vehicular Technology Conference
1998 International Symposium on Information Theory

Editorships, Conference Committees (cont.):

Session chair:
Communication Theory Workshop (2015)
Allerton Conference (1997,2012)
International Symposium on Information Theory
(1997,1998,2000,2004,2005,2006,2007,2010,2011)
Globecom Conference (2005,2010)
Information Theory and Applications Workshop (University of Ca., San Diego)
(2008,2010)
International Conference on Communications (2006,2008)
Communication Theory Workshop (1999,2008)
Cognitive Radio Oriented Wireless Networks and Communications (CrownCom) (2007)
Princeton Conf. on Communications and Information Sciences and Systems
(1993,2000,2004)
IEEE Vehicular Technology Conference (1995,1996)
IEEE International Conference on Acoustics, Speech, and Signal Processing
(1993)

Funded Research Projects

1. *Futurewei, Inc.*, "Resource Allocation in Heterogeneous Networks", (50% with D. Guo), 2/16.
2. *Futurewei, Inc.*, "Crossing the Millimeter Wave Frontier", (50% with D. Guo), 6/16.
3. *Nokia Networks*, "Distributed Interference Cancellation and Cooperation in Cellular Networks", 9/14-16.
4. *Futurewei, Inc.*, "Resource Allocation in Heterogeneous Networks", (50% with D. Guo), 2/15.
5. *Futurewei, Inc.*, "Allocation and Sharing of Licensed and Unlicensed Spectrum in Heterogeneous Networks", (50% with D. Guo), 2/14.
6. *National Science Foundation*, EARS program, "Spectrum Sharing in the Shadow of Uncertainty", (25% with R. Berry, V. Subramanian, and R. Vohra), 1/13-17.
7. *Cisco*, "Graph-Based Modeling and Algorithms for Inteference Mitigation", (50% with D. Guo), 4/13.
8. *Futurewei, Inc.*, "Resource and Interference Management for Dense Het-Nets", (50% with D. Guo), 5/13.

9. *National Science Foundation*, EARS program,
"Market Structures for Efficient Spectrum Sharing",
(25% with R. Berry, V. Subramanian, and R. Vohra),
1/13-1/14.
10. *Futurewei, Inc.*, "Topology Adaptation and Interference Management
for Het-Nets", (50% with D. Guo), 3/12-3/13.
11. *Futurewei, Inc.*, "Cooperation and Information Exchange
in Cellular Networks", (50% with D. Guo), 11/10-11/11.
12. *National Science Foundation*, CISE program,
"Limited Feedback and Information Exchange for Wireless Systems",
(50% with D. Guo), 9/1/10-8/30/13.
13. *National Science Foundation*, NeTS program,
"Spectrum Markets for Wireless Services",
(35% with R. Berry and R. Vohra), 8/1/09-7/31/13.
14. *Army Research Office*,
"Dynamic Spectrum Sharing with Limited Network State Information",
(50% with R. Berry), 7/1/06-6/30/10.
15. *Motorola-Northwestern Center for Telecommunications*,
"Scheduling and Resource Allocation for MIMO OFDM Networks",
(50% with R. Berry), 9/1/06-8/31/10.
16. *National Science Foundation*, NeTS program,
"Smart Markets for Smart Radios",
(35% with R. Berry and R. Vohra), 9/1/05-8/31/10.
17. *National Science Foundation and Army Research Office*,
"Adaptive Transceivers for Wireless Networks",
9/1/03-8/31/07.
18. *Motorola-Northwestern Center for Telecommunications*,
"Dynamic Spectrum Sharing with Cognitive Radios",
9/1/04-8/31/07.
19. *Mayflower Communications (SBIR)*, "Multistage Antenna Array
based Adaptive Signal Processing for Wideband Systems", 12/1/06-6/1/07.
20. *Motorola-Northwestern Center for Telecommunications*,
"Design and Performance of Ad Hoc Cooperative Wireless Networks",
(50% with R. Berry), 9/1/03-8/31/06.
21. *Motorola University in Partners Research Grant*,
"Advanced Receivers for Mobile Cellular Systems",
9/1/04-8/31/07.
22. *Motorola*,
"Link Layer Adaptation for Wireless Packet Data Systems",
9/1/01-8/31/04.

23. *National Science Foundation*,
"Adaptive Reduced-Rank Interference Suppression: Algorithms, Performance, and Low-Power VLSI" (50% with M. Sarrafzadeh), 9/1/00-8/31/04.

24. *National Science Foundation*,
"Dynamic Resource Allocation for Code-Division Multiple Access", (60% with S. Jordan), 10/1/99-9/30/03.

25. *Motorola*,
"Multi-cell Dynamic Resource Allocation" (60% with Randy Berry), 9/1/01-8/31/03.

26. *Army Research Office*,
"Adaptive Signal Processing Techniques for Spread Spectrum Multiple Access",
8/1/99-7/31/02.

27. *National Science Foundation*,
"Multiuser Pulse Optimization for Mobile Cellular Communications with Coordinating Base Stations",
9/1/96-8/30/99.

28. *Army Research Office*,
"Linear Interference Suppression for Direct-Sequence Code-Division Multiple-Access", 8/15/96-8/14/99.

29. *Motorola*,
"Adaptive Spatial Interference Suppression",
9/1/96-8/30/99.

30. *European Space Agency*,
"Applicability of Adaptive Interference Mitigation Techniques to Satellite CDMA Radio Networks",
11/15/97-11/14/98.

31. *Center for Research on Applied Signal Processing*,
"Blind Space-Time Multiuser Detection",
9/1/98-8/30/99.

32. *Ameritech Cellular*,
"Modeling of the Cellular Digital Packet Data Protocol",
1/1/96-5/15/96.

Invited Talks (since 2009)

1. *Macro-economic Effects of Credit Shocks: Loan Rigidities and System Memory*, Center for Science of Information, Purdue University, November 2016.
2. *Uplink Resource Allocation with Cooperation*, Huawei University Day, August 2016.
3. *Traffic-Driven Resource Allocation Over Slow Time-Scales*, International Tyrrhenian Workshop, Livorno, Italy, Sep. 2016.
4. *Slow Resource Allocation for Heterogeneous Networks*, Institute for Network Coding, Chinese University of Hong Kong.
5. *The Impact of Unlicensed Spectrum Allocations*, Institute for Network Coding, Chinese University of Hong Kong, Feb. 2016.
6. *The Impact of Unlicensed Spectrum on Small-Cell Resource Allocation*, given at Huawei University Day, Rolling Meadows, August 2015.
7. *Wireless Research at Northwestern University*, presentation to Huawei executives, Rolling Meadows, October 2014.
8. *The Case Against Unlicensed Spectrum*, given at Huawei University Day, Rolling Meadows, August 2014.
9. *The Cost of Free Spectrum*, given at
    - Workshop on Advances in Wireless Communications, held at Southeast University, Nanjing, China, and UESTC, Chengdu, China, July 2014;
    - University of Erlangen, July 2014;
    - Singapore University of Technology and Design, March 2014;
    - Workshop on Information Theory and Applications (ITA), San Diego, February 2014.
10. *Interference Cancellation and Antenna Selection Techniques for Small-Cell Clusters*, given at Nokia Siemens Networks, Oulu, Finland, June 2013.
11. *Power and Beam Optimization in Interference Networks*, given at the University of Oulu, June 2013.
12. *Analog Interference Pricing for Joint Power Control and Beamforming*, Information Theory and Applications Workshop, UCSD, Feb. 2013.
13. *Dynamic Spectrum Markets*, given at

- COIN Workshop, Universität Ruhr, Bochum, Germany, October 2012
- Huawei University Day, Ottawa, Canada, August 2012
- CSIRO, Marsfield, New South Wales, Australia, May 2012
- Technical University of Munich, December 2011

14. *Adaptive Beamforming in Interference Networks*, given at
    - Department of EE, Kasetsart University, Bangkok, Thailand, July 2012
    - CSIRO, Marsfield, New South Wales, Australia, April 2012
    - Motorola Mobility, August 2011
    - Motorola Network Solutions, March 2011
    - Huawei, March 2011
    - Comonsens Coordination Meeting, A Coruna, Spain, July 2010
    - Technical University of Berlin, July 2010
15. *Uplink/Downlink Bi-Directional Training for MIMO Cellular Networks*, Allerton Conf, Sep. 2011.
16. *Spectrum Markets*, 1/2-day tutorial given at the *IEEE Dynamic Spectrum Sharing (DySPAN) Conference*, Aachen, Germany, May 2011.
17. *Interference Alignment in MIMO Cellular Networks*, Information Theory and Applications Workshop, UCSD, Feb. 2011.
18. *Distributed Optimization in MIMO Interference Networks*, University of Illinois, Chicago, Feb. 2010
19. *Distributed Methods for Interference Management*, given at
    - Motorola, Arlington Heights, IL, Jan 2010
    - Huawei, Rolling Meadows, IL, Feb. 2010
20. *Beamforming Techniques for Single-Beam MIMO Interference Networks*, Allerton Conf., Oct 2010
21. *Adaptive Beamforming in Interference Networks via Bi-Directional Training*, Princeton Conf. on Information Sciences and Systems (CISS), March 2010
22. *Minimum Mean Squared Error Interference Alignment*, UCSD Workshop on Information Theory and Applications, Feb. 2010
23. *Battle of the Bandwidths: Spectrum Markets, Interference Management, and Wireless System Design*, given at
    - Chinese University of Hong Kong, March 2009 (Wei Lun lecture)

- Northwestern University (meet the faculty seminar), May 2009
- Maturing Internet Studies Workshop, Northwestern University (School of Law), May 2009
- Communication Theory Workshop, Cancun, May 2010

24. *Complementarities in Spectrum Markets*,
Allerton Conf., October 2009

25. *Feedback and Information Exchange in Wireless Networks*,
Hong Kong University of Science and Technology, March 2009

26. *Channel State Feedback with Multicarrier Modulation: A Rate-Distortion Approach*,
UCSD Workshop on Information Theory and Applications, Feb. 2009

Patents

1. S. Nagaraj, M. Honig, and K. Zeineddine, "Methods and Apparatus for Coordinated Multipoint Communication", Publication number 20160105221, April 2016 (filed Oct. 2015).
2. C. Sankaran, P. Fleming, E. Visotsky, and M. Honig, "Downlink Power Control Using Relative Load", Patent Number 9,078,224, July 7, 2015.
3. P. Fleming, S. Nagaraj, R. M. Ramakrishna, and M. Honig, "Methods and Apparatus for Interference Management", Patent Number 8,903,369, Dec. 2, 2014.
4. M. L. Honig and V. Tripathi, "Adaptive Turbo Decision Feedback Equalization", Patent Number 7,088,770, August 8, 2006.
5. M. L. Honig, "Reduced-Rank Adaptive Filtering", Patent Number 6,956,897, Oct. 18, 2005.
6. V. Tripathi, R. Peterson, E. Visotsky, and M. L. Honig, "Reliability-Based Type-II Hybrid ARQ Scheme", Patent Number 6,671,849, Dec. 30, 2003.
7. M. L. Honig and U. Madhow, "Hybrid Intra-Cell TDMA/Inter-Cell CDMA for Wireless Networks", Patent Number 5,481,533, Jan. 2, 1996.
8. M. L. Honig and U. Madhow, "Interference Suppression Schemes for Spread Spectrum Code Division Multiple Access", Patent Number 5,343,496, Aug. 30, 1994.
9. P. Crespo and M. L. Honig, "Rapidly Converging Adaptive IIR Algorithms for an Adaptive Pole-Zero Decision Feedback Equalizer", Patent Number 5,293,402, March 8, 1994.
10. P. Crespo, M. L. Honig, and J. A. Salehi, "A Code Division Multiple Access Technique with Arbitrary Spectral Shaping". Four patents have been issued with this title: Patent Numbers 5,173,923 (December 22, 1992), 5,175,743 (December 29, 1992), 5,175,744 (December 29, 1992), and 5,177,768 (January 5, 1993).
11. P. Crespo and M. L. Honig, "Wideband Digital Equalizers for Subscriber Loops", Patent Number 5,031,194, July 9, 1991.

Publications, M. Honig

Books and Book Chapters

1. T. Alpcan, H. Boche, M. L. Honig, and H. V. Poor, Editors, "Mechanisms and Games for Dynamic Spectrum Allocation", Cambridge University Press, 2013.
2. M. L. Honig (Ed.), "Advances in Multiuser Detection", J. Wiley & Sons, Inc., Hoboken, NJ, August 2009.
3. M. L. Honig, "Overview of Multiuser Detection", Chapter 1 in [1].
4. M. Peacock, I. Collings, and M. L. Honig, "Performance with Random Signatures", Chapter 4 in [1].
5. M. L. Honig and H. V. Poor, "Adaptive Interference Mitigation", in *Wireless Communications: A Signal Processing Perspective*, H. V. Poor and G. Wornell, Eds., Prentice-Hall, Chapter 2, pp. 64-128, Englewood Cliffs, NJ, 1998.
6. M. L. Honig and M. Barton, "Baseband Signaling and Pulse Shaping", *Mobile Communications Handbook, Third Ed.,* Jerry Gibson, Ed., CRC Press, pp. 35-54, 2012.
7. K. Steiglitz, M. L. Honig, and L. Cohen, "A Computational Market Model Based on Individual Action", in *Market-Based Control: A Paradigm for Distributed Resource Allocation,* S. Clearwater, Ed., World Scientific, Hong Kong, pp. 1-27, 1996.
8. D. J. Hajela and M. L. Honig, "On Finding Maximally Separated Signals for Digital Communications", in *Open Problems in Communication and Computation,* T. Cover and B. Gopinath Eds., Springer-Verlag, New York, pp. 92-99, 1987.
9. M. L. Honig and D. G. Messerschmitt, *Adaptive Filters: Structures, Algorithms, and Applications,* Kluwer Academic Publishers, 1985.

Journal Publications

1. T. Hazlett and M. L. Honig, "Valuing Spectrum Allocations", to appear in the *Michigan Telecommunications and Technology Law Review*.
2. T. Nguyen, H. Zhou, R. Berry, M. L. Honig, and R. Vohra, "The Cost of Free Spectrum", to appear in *Operations Research*.
3. K. Zeineddine, M. L. Honig, and S. Nagaraj, "Uplink Power Allocation for Distributed Interference Cancellation with Channel Estimation Error", to appear in *IEEE Transactions on Wireless Communications*.

4. B. Zhuang, D. Guo, and M. L. Honig, "Energy-Efficient Cell Activation, User Association, and Spectrum Allocation in Heterogeneous Networks", to appear in *Journal on Selected Areas in Communications* (arXiv:1509.04805).
5. B. Zhuang, D. Guo, and M. L. Honig, "Traffic-Driven Spectrum Allocation in Heterogeneous Networks", vol. 33, No. 10, pp. 2027-2038, Oct 2015.
6. M. Xu, D. Guo, and M. L. Honig, "Distributed Bi-Directional Training of Nonlinear Precoders and Receivers in Cellular Networks", *IEEE Transactions on Signal Processing*, vol. 63, No. 21, pp. 5597-5608, Nov. 2015.
7. C. Shi, R. A. Berry, M. L. Honig, "Bi-Directional Training for Adaptive Beamforming and Power Control in Interference Networks," *IEEE Transactions on Signal Processing*, vol.62, no.3, pp.607-618, Feb. 2014.
8. D. Schmidt, C. Shi, R. Berry, M. L. Honig, and W. Utschick, "Comparison of Distributed Beamforming Algorithms for MIMO Interference Networks", *IEEE Transactions on Signal Processing*, Vol. 61, No. 13, pp. 3476-3489, April 2013.
9. M. Agarwal, D. Guo, and M. L. Honig, "Error Exponent for Gaussian Channels with Partial Sequential Feedback", *IEEE Transactions on Information Theory*, Vol. 59, No. 8, pp. 4757-4766, April 2013.
10. M. Xu, D. Guo, and M. L. Honig, "Two-Cell Downlink Noncoherent Cooperation without Transmitter Phase Alignment", *IEEE Transactions on Wireless Communications*, Vol. 12, No. 8, pp. 3920-3931, May 2013.
11. M. Xu, D. Guo, and M. L. Honig, "Multi-Carrier Beamforming with Limited Feedback: A Rate Distortion Approach", *IEEE Trans. on Information Theory*, Vol. 59, No. 2, pp. 916-927, Sep. 2012.
12. H. Zhou, R. A. Berry, M. L. Honig, and R. Vohra, "Complexity of Allocation Problems in Spectrum Markets with Interference Complementarities", *Journal on Selected Areas in Communications*, Vol. 31, No. 3, pp. 489-499, March 2013.
13. C. Guthy, W. Utschick, and M. L. Honig, "Large System Analysis of Sum Capacity in the Gaussian MIMO Broadcast Channel", *Journal on Selected Areas in Communications*, to appear, 2013.
14. M. Agarwal, M. L. Honig, and B. Ata, "Adaptive Training for Correlated Fading Channels with Feedback" *IEEE Transactions on Information Theory*, vol. 58, no. 8 (2012): 5398-5417.
15. R. Berry, M. L. Honig, and R. Vohra, "Spectrum Markets: Motivation, Challenges, and Implications", *IEEE Communications Magazine*, Nov. 2010.
16. W. Santipach and M. L. Honig, "Optimization of Training and Feedback Overhead for Beamforming over Block Fading Channels", *IEEE Transactions on Information Theory*, Dec. 2010.
17. M. Agarwal, D. Guo, and M. L. Honig, "Limited-Rate Channel State Feedback for Multicarrier Block Fading Channels", *IEEE Transactions on Information Theory*, Nov. 2010.

18. M. Agarwal and M. L. Honig, "Wideband Fading Channel Capacity with Training and Partial Feedback", *IEEE Transactions on Information Theory*, Vol. 56, No. 10, pp. 4865-4873, Oct. 2010.
19. Y. Zhu, D. Guo, and M. L. Honig, "A Message-Passing Approach for Joint Channel Estimation, Interference Mitigation and Decoding", *IEEE Transactions on Wireless Communications*, Vol. 8, No. 12, pp. 6008-6018, Dec. 2009.
20. D. Schmidt, C. Shi, R. A. Berry, M. L. Honig, and W. Utschick, "Pricing Algorithms for Power Control and Beamformer Design in Interference Networks", *IEEE Signal Processing Magazine*, Vol. 26, No. 5, pp. 53-63, September 2009.
21. M. Riemensberger, Y. Sagduyu, M. L. Honig, and W. Utschick, "Training Overhead for Decoding Random Linear Network Codes in Wireless Networks", *IEEE Journal on Selected Areas in Communications*, Vol. 27, No. 5, pp. 729-737, June 2009.
22. W. Santipach and M. L. Honig, "Capacity of a Multi-Antenna Fading Channel with a Quantized Precoding Matrix", *IEEE Transactions on Information Theory*, Vol. 55, No. 3, pp. 1218-1234, March 2009.
23. J. Chen, R. Berry, and M. Honig, "Limited Feedback Schemes for Downlink OFDMA Based on Sub-Channel Groups", *IEEE Journal on Selected Areas in Communications*, Vol. 26, No. 8, pp. 1451-1461, Oct. 2008.
24. D. J. Ryan, I. V. L. Clarkson, I. B. Collings, D. Guo, and M. L. Honig, "QAM and PSK Codebooks for Limited Feedback MIMO Beamforming", *IEEE Transactions on Communications*, Vol. 57, No. 4, pp. 1184-1196, Feb. 2009.
25. J. Bae, E. Beigman, R. A. Berry, M. L. Honig, and R. Vohra, "Sequential Bandwidth and Power Auctions for Distributed Spectrum Sharing", *IEEE Journal on Selected Areas in Communications*, Vol. 26, No. 7, pp. 1193-1203, September 2008.
26. Y. Sun and M. L. Honig, "Asymptotic Capacity of Multi-Carrier Transmission with Frequency-Selective Fading and Limited Feedback", *IEEE Transactions on Information Theory*, Vol. 54, No. 7, pp. 2879-2902, July 2008.
27. M. Peacock, I. B. Collings, and M. L. Honig, "Eigenvalue Distributions of Sums and Products of Large Random Matrices via Incremental Expansions", *IEEE Transactions on Information Theory*, Vol. 54, No. 5, pp. 2123-2138, May 2008.
28. K. Zachariades, M. L. Honig, and A. K. Katsaggelos, "Source Fidelity over Fading Channels: Performance of Erasure and Scalable Codes", *IEEE Transactions on Communications*, Vol. 56, No. 7, pp. 1080-1091, July 2008.
29. P. Liu, R. A. Berry, M. L. Honig, and S. Jordan, "Packet-Based Power Allocation for Forward Link Data Traffic", *IEEE Transactions on Wireless Communications*, Vol. 6, No. 8, pp. 2894-2903, August 2007.

30. Y. Sun and M. L. Honig, "Performance of Reduced-Rank Equalization", *IEEE Transactions on Information Theory*, Vol. 52, No. 10, pp. 4548-4562, October 2006.

31. M. Peacock, I. Collings, and M. L. Honig, "Unified Large System Analysis of MMSE and Adaptive Least Squares Receivers for a class of Random Matrix Channels", *IEEE Transactions on Information Theory*, Vol. 52, No. 8, pp. 3567-3600, August 2006.

32. Y. Sun and M. L. Honig, "Reduced-Rank Signature-Receiver Adaptation", *IEEE Transactions on Wireless Communications*, Vol. 5, No. 10, pp. 2896-2902, October 2006.

33. P. Liu, R. A. Berry, and M. L. Honig, "A Fluid Analysis of a Utility-Based Wireless Scheduling Policy", *IEEE Transactions on Information Theory*, Vol. 52, No. 7, pp. 2872-2889, July 2006.

34. J. Huang, R. Berry, and M. L. Honig, "Distributed Interference Compensation for Wireless Networks", *IEEE Journal on Selected Areas in Communications*, Vol. 24, No. 5, pp. 1074-1084, May 2006.

35. M. Peacock, I. Collings, and M. L. Honig, "Asymptotic Spectral Efficiency of Multi-user Multi-Signature CDMA in Frequency-Selective Channels", *IEEE Transactions on Information Theory*, Vol. 52, No. 3, pp. 1113-1129, March 2006.

36. W. Santipach and M. L. Honig, "Signature Optimization for CDMA with Limited Feedback", *IEEE Transactions on Information Theory*, Vol. 51, No. 10, pp. 3475-3492, October 2005.

37. W. Xiao and M. L. Honig, ‘‘Large System Transient Behavior of Adaptive Least Squares Algorithms’’, *IEEE Transactions on Information Theory*, Vol. 51, No. 7, pp. 2447-2474, July 2005.

38. E. Visotsky, Y. Sun, V. Tripathi, M. L. Honig, and R. Peterson, "Reliability-Based Incremental Redundancy with Convolutional Codes", *IEEE Transactions on Communications*, Vol. 53, No. 6, pp. 987-997, June 2005.

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