Dongning Guo

Curriculum Vitae

Contact

Department of Electrical Engineering & Computer Science
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Employment

9/2015–present	Professor Department of Electrical Engineering & Computer Science Northwestern University, Evanston, IL, USA.
9/2010–8/2015	Associate Professor Department of Electrical Engineering & Computer Science Northwestern University, Evanston, IL, USA.
9/2004–8/2010	Assistant Professor Department of Electrical Engineering & Computer Science Northwestern University, Evanston, IL, USA.
7/2014–6/2015	Visiting Scientist (courtesy appointment) Research Laboratory of Electronics Massachusetts Institute of Technology, Cambridge, MA, USA.
3/2011–8/2011	Consultant New Jersey Research & Development Center, Qualcomm Inc., Bridgewater, NJ, USA.
10/2010–2/2011	Visiting Professor Institute of Network Coding Chinese University of Hong Kong, China.
8/2006–9/2006	Visiting Professor Department of Electronics & Telecommunications Norwegian University of Science & Technology, Trondheim, Norway.
2/1998–8/1999	Research & Development Engineer Centre for Wireless Communications (now the Institute for Infocomm Research), Singapore.

Education

Ph.D., Electrical Engineering, 2004
Princeton University, Princeton, NJ, USA.
Thesis: *Gaussian Channels: Information, Estimation and Multiuser Detection*

Adviser: Sergio Verdú
Committee: Sergio Verdú, Shlomo Shamai, H. Vincent Poor, Robert Calderbank, Mung Chiang.

M.A., Electrical Engineering, 2001
Princeton University, Princeton, NJ, USA.

M.Eng., Electrical Engineering, 1999
National University of Singapore, Singapore.
Thesis: *Linear Parallel Interference Cancellation in CDMA*
Adviser: Lars K. Rasmussen

B.Eng., Electrical Engineering & Information Science, 1995
University of Science & Technology of China, Hefei, China.

Teaching Experience

EECS 222 Fundamentals of Signals and Systems (undergraduate)
Instructor: Fall 2005, 2006

EECS 302 Probabilistic Systems and Random Signals (undergraduate)
Instructor: Spring 2010, 2012, 2013, 2017, 2018

EECS 307 Communication Systems (undergraduate/graduate)
Instructor: Fall 2011, 2015

EECS 333 Introduction to Communication Networks (undergraduate/graduate)
Instructor: Spring 2005, 2006, 2007, Fall 2007, 2008, 2009, 2012, Spring 2014, 2015, 2016, 2018

EECS 380 Wireless Communications (undergraduate/graduate)
Instructor: Spring 2008, 2009

EECS 395 Blockchain and Cryptocurrency
Instructor: Fall 2018

EECS 428 Information Theory (graduate)
Instructor: Winter 2006, 2008, Fall 2009, Spring 2011, Fall 2013, Spring 2015, 2017.

EECS 454 Advanced Communication Networks
Instructor: Spring 2016.

EECS 395/495 A Hands-on Course in Communications (titled Software Radio Laboratory when first offered in Winter 2013)
Instructor: Winter 2013, 2014, 2017.

EECS 510-1 Topics in Information Theory (graduate)
Instructor: Winter 2007, 2009, Spring 2012

EECS 510-3 Multiuser Communications (graduate)
Instructor: Winter 2005

MSIT-431 Probability and Statistical Methods
Instructor: Fall 2013, 2014, 2015, 2016, 2017, 2018

Short course: Network Information Theory
Instructor: Aug. 31–Sept. 2, 2008, University of Science & Technology of China, Hefei, China.

Short course: Information Theory
Instructor: Mar. 6 and 8, 2006, Institute of Infocomm Research, Singapore.

Honors & Awards

IEEE Wireless Communication and Networking Conference Best Paper Award, 2017.

Finalist of the DARPA Spectrum Challenge, 2014. Leader of Team Northwestern Wildcats. Lead a group of 13 undergraduate and graduate students to participated in the Qualifying Contest, the Preliminary Challenge, and the Final Challenge over a period of 15 months. Was one of 15 finalists out of 90 teams nationally.

Adviser and co-author of Ph.D. student Lei Zhang, who won the 2011 IEEE International Symposium on Information Theory Student Paper Award [C36].

The IEEE Guglielmo Marconi Prize Paper Award in Wireless Communications, 2010 [J34]. (This annual award is for an original paper published in the IEEE Transactions on Wireless Communications.)

National Science Foundation Faculty Early Career Development (CAREER) Award, 2007–2012.

Runner-up of the 2007 Information Theory Society Paper Award [J46]. (Honorable mention in the Sept. 2007 issue of the IEEE Information Theory Society Newsletter.)

The Huber & Suhner Best Student Paper Award, International Zurich Seminar on Broadband Communications, Switzerland, 2000.

Press Coverage

My work with a team of material scientists and mechanical engineers from the McCormick School of Engineering and Applied Science discovered that using the data storage pattern from a Blu-ray disc improves solar cell performance. The findings were first published in Nature Communications and have thus far been reported by The WashingtonPost, NBC News, Fox News, Scientific America, IEEE Spectrum, Popular Science, Gizmodo, TheVerge, Engadget, Gizmag, Phys.org, LiveScience, ScienceDaily, ScienceNews, Motherboard (Vice), and BusinessInsider (Australia), among others.

Ph.D. Theses Supervised

[PhD1] M. Agarwal, *Training and limited feedback strategies for fading channel*. PhD thesis, Northwestern University, 2008. Co-advised with M. L. Honig. Manish Agarwal is now with AQR Capital Management, CT, USA.

[PhD2] J. Luo, *Estimation of hidden Markov processes and neighbor discovery in wireless networks*. PhD thesis, Northwestern University, 2010. Jun Luo was with Goldman Sachs; he is now founder and CEO of a derivatives trading firm in Beijing, China.

[PhD3] Y. Zhu, *Interference Channels with Channel Uncertainties*. PhD thesis, Northwestern University, 2011. Co-advised with M. L. Honig. Yan Zhu is now with Broadcom, Inc., CA, USA.

[PhD4] M. Xu, *Limited Feedback and Information Exchange for Wireless Cellular Networks*. PhD thesis, Northwestern University, 2012. Co-advised with M. L. Honig. Mingguang Xu is now with Marvell Technology Group, CA, USA.

[PhD5] L. Zhang, *Virtual Full Duplex Wireless Networks*. PhD thesis, Northwestern University, 2012. Lei Zhang is now with Qualcomm, Inc., NJ, USA.

[PhD6] K. H. Hui, *Medium Access Control for Wireless Networks with Peer-to-Peer State Exchange*. PhD thesis, Northwestern University, 2012. Co-advised with R. A. Berry. Ka Hung Hui is now with Google, Inc., CA, USA.

[PhD7] B. Zhuang, *Interference and Resource Management in Heterogeneous Cellular Networks*. PhD thesis, Northwestern University, 2015. Co-advised with M. L. Honig. Binnan Zhuang is now with Samsung, San Diego, CA, USA.

[PhD8] F. Teng, *Resource Management in Next Generation Wireless Networks: Optimization and Games*. PhD thesis, Northwestern University, 2016.

[PhD9] X. Chen, *Internet of Things: Fundamental Limits and Practical Algorithms*. PhD thesis, Northwestern University, 2016. Xu Chen is now with NIO, Inc.

[PhD10] Z. Zhou, *Centralized Radio Resource Management for Metropolitan Area Networks*. PhD thesis, Northwestern University, 2018. Zhiyi Zhou is now with Susquehanna, PA.

[PhD11] R. Keating, *Multiuser Ranging and Localization for Future Wireless Networks*. PhD thesis, Northwestern University, 2018. Ryan Keating is now with Nokia, IL.

Services Member, EECS Faculty Search Committee (for a junior position in devices),

2016–2017.

Chair, Electrical Engineering Curriculum Committee, 2014–date.

Chair, EECS Faculty Search Committee (for a junior position in communications, networking and control), 2013–2014. Succeeded in hiring a junior faculty member (of underrepresented group).

Chair, EECS Faculty Search Committee (for a junior position in communications, networking and control), 2012–2013. Search concluded without hire.

Member, EECS Faculty Search Committee (for a junior position in graphics, human-computer interaction and cyberphysical systems), 2011–2012. Succeeded in hiring a junior faculty member.

Co-chair of the EECS Distinguished Lecture Committee, 2009–2014. Member of the EECS Distinguished Lecture Committee, 2006–2009.

Member of the Electrical Engineering Curriculum Committee, 2004–2012.

Panelist on Discussion "The n Things I Wish I Knew Before the PhD Job Search," Department of Electrical Engineering and Computer Science, Northwestern Unviersity, May 14, 2009.

Professional Activities

Associate Editor, IEEE Transactions on Wireless Communications (2018–date).

Editor, Foundations and Trends in Communications and Information Theory (2012–).

Associate Editor in the area of Shannon Theory, IEEE Transactions on Information Theory (2010–2013).

Guest Editor of the IEEE Journal on Selected Areas in Communications Special Issue on In-Band Full-Duplex Wireless Communication and Networks, 2014.

Chair Position at Conferences:

Co-chair of Technical Program Committee: 2018 IEEE Information Theory Workshop (ITW).

Co-chair of Program and Local Arrangements: Second North American School of Information Theory, Evanston, IL, USA, Aug. 10–13, 2009. (About 150 students and 20 faculty from over 40 institutions attended the event.)

Finance Chair: 2008 IEEE Communication Theory Workshop (CTW), 2010 IEEE CTW; 2012 IEEE CTW.

Member of Technical Program Committee:

2019 IEEE International Symposium on Information Theory (ISIT).

2019 ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc).

2018 IEEE ISIT.

2018 ACM MobiHoc.

2017 IEEE ITW.

2017 ACM MobiHoc.

2016 IEEE ITW.

2016 IEEE ISIT.

2016 ACM MobiHoc.

2015 International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt).

2015 IEEE ITW.

2014 IEEE ISIT.

2013 ChinaSIP.

2013 IEEE ITW.

2013 IEEE IEEE International Conference on Communications (ICC), Communications Theory Symposium.

2013 IEEE Wireless Communications & Networking Conference (WCNC).

2013 IEEE ICC - Workshop on Networking across disciplines: Communication Networks, Complex Systems and Statistical Physics (NETSTAT).

2012 International Conference on Connected Vehicles and Expo.

the 2nd International Workshop on Network Coding in Wireless Relay Networks, 2012 IEEE International Symposium on Personal, Indoor and Mobile Radio Communications.

2012 IEEE International Conference on Communication Systems.

2012 IEEE ICC, Communications Theory Symposium.

2011 First International ICST Workshop on Network Coding in Wireless Relay Networks (NRN).

2010 IEEE ISIT.

2010 IEEE ICC, Communications Theory Symposium.

2009 IEEE GLOBECOM,[1] Communications Theory Symposium.

2009 IEEE ICC, Communications Theory Symposium.

[1] IEEE Global Communications Conference.

2009 IEEE ICC, Wireless Communications Symposium.

2009 PHYSCOMNET.[2]

2008 IEEE GLOBECOM, Wireless Communications Symposium.

2008 IEEE ICC, Wireless Communications Symposium.

2008 PHYSCOMNET.

2007 IEEE GLOBECOM, Wireless Communications Symposium.

2007 IEEE WCNC.

2006 International Wireless Communications and Mobile Computing Conference, Information and communication theory symposium.

Publications

H-index by Google Scholar: 35

Book

[B1] D. Guo, S. Shamai (Shitz), and S. Verdú, *The Interplay between Information and Estimation Measures*. Foundations and Trends in Signal Processing, NOW Publishers, 2012.

Book Chapters

[BC1] X. Chen and D. Guo, "Public safety broadband network with rapid-deployment base stations," in *Wireless Public Safety Networks* (D. Câmara and N. Nikaein, eds.), vol. 2: A Systematic Approach, ch. 6, Elsevier, 2016.

[BC2] D. Guo and T. Tanaka, "Generic multiuser detection and statistical physics," in *Advances in Multiuser Detection* (M. Honig, ed.), ch. 5, Wiley-IEEE Press, 2009.

[BC3] D. Guo and S. Verdú, "Multiuser detection and statistical mechanics," in *Communications, Information and Network Security* (V. Bhargava, H. V. Poor, V. Tarokh, and S. Yoon, eds.), ch. 13, pp. 229–277, Kluwer Academic Publishers, 2002.

Journal Articles (Published/In Press)

[J1] B. Zhuang, D. Guo, E. Wei, and M. L. Honig, "Large-scale spectrum allocation for cellular networks via sparse optimization," *IEEE Trans. Signal Process.*, vol. 66, pp. 5470–5483, Oct. 2018.

[J2] R. Keating and D. Guo, "Multiuser simultaneous two-way ranging," *IEEE Trans. Wireless Commun.*, vol. 17, pp. 5107–5119, Aug. 2018.

[2] Workshop on Physics-Inspired Paradigms in Wireless Communications and Networks.

[J3] X. Chen, X. Li, D. Guo, and J. Grosspietsch, "Resource allocation in public safety broadband networks with rapid-deployment access points," *IEEE Trans. Veh. Technol.*, vol. 67, pp. 1660–1671, Feb. 2018.

[J4] Y. Liu, Y. Shen, D. Guo, and M. Z. Win, "Network localization and synchronization using full-duplex radios," *IEEE Trans. Signal Process.*, vol. 66, pp. 714–728, Feb. 2018.

[J5] B. Zhuang, D. Guo, E. Wei, and M. L. Honig, "Scalable spectrum allocation and user association in networks with many small cells," *IEEE Trans. Commun.*, vol. 65, no. 7, pp. 2931–2942, 2017.

[J6] X. Chen, T. Y. Chen, and D. Guo, "Capacity of gaussian many-access channels," *IEEE Trans. Inf. Theory*, vol. 63, pp. 3516–3539, June 2017.

[J7] Z. Zhou, D. Guo, and M. L. Honig, "Licensed and unlicensed spectrum allocation in heterogeneous networks," *IEEE Trans. Commun.*, vol. 65, pp. 1815–1827, 2017.

[J8] F. Teng, D. Guo, and M. L. Honig, "Sharing of unlicensed spectrum by strategic operators," *IEEE J. Sel. Areas Commun. Special Issue on Game Theory for Networks*, vol. 35, pp. 668–679, 2017.

[J9] X. Li, D. Guo, J. Grosspietsch, H. Yin, and G. Wei, "Maximizing mobile coverage via optimal deployment of base station and relays," *IEEE Trans. Veh. Technol.*, vol. 65, pp. 5060–5072, 2016.

[J10] B. Zhuang, D. Guo, and M. L. Honig, "Energy-efficient cell activation, user association, and spectrum allocation in heterogeneous networks," *IEEE J. Sel. Areas Commun. Special Issue on Energy-Efficient Techniques for 5G Wireless Communication Systems*, vol. 34, no. 4, pp. 823–831, 2016.

[J11] M. Xu, D. Guo, and M. L. Honig, "Distributed bi-directional training of nonlinear precoders and receivers in cellular networks," *IEEE Trans. Signal Process.*, vol. 63, pp. 5597–5608, 2015.

[J12] B. Zhuang, D. Guo, and M. L. Honig, "Traffic-driven spectrum allocation in heterogeneous networks," *IEEE J. Sel. Areas Commun. Special Issue on Recent Advances in Heterogeneous Cellular Networks*, vol. 33, no. 10, pp. 2027–2038, 2015.

[J13] H. Li, S. M. Moser, and D. Guo, "Capacity of the memoryless additive inverse Gaussian noise channel," *IEEE J. Select. Areas Commun., Molecular, Biological, and Multi-Scale Communications Series*, vol. 32, pp. 2315–2329, Dec. 2014.

[J14] A. J. Smith, C. Wang, D. Guo, C. Sun, and J. Huang, "Repurposing Bluray movie discs as quasi-random nanoimprinting templates for photon management," *Nature Communications*, vol. 5, Oct. 2014.

[J15] L. Zhang and D. Guo, "Virtual full duplex wireless broadcasting via compressed sensing," *IEEE/ACM Trans. Netw.*, vol. 22, pp. 1659–1671, Oct. 2014.

[J16] A. Sabharwal, P. Schniter, D. Guo, D. W. Bliss, S. Rangarajan, and R. Wichman, "In-band full-duplex wireless: challenges and opportunities," *IEEE J. Sel. Areas Commun. Special Issue on In-band Full-duplex Wireless Communications and Networks*, vol. 32, pp. 1637–1652, Sept. 2014.

[J17] C. Gil Taborda, F. Pérez-Cruz, and D. Guo, "Information–estimation relationships over binomial and negative binomial models," *IEEE Trans. Inf. Theory*, vol. 60, pp. 2630–2646, May 2014.

[J18] L. Zhang, H. Li, and D. Guo, "Capacity of Gaussian channels with duty cycle and power constraints," *IEEE Trans. Inf. Theory*, vol. 60, pp. 1615–1629, Mar. 2014.

[J19] F. Wang, X. Yuan, S. C. Liew, and D. Guo, "Wireless MIMO switching: weighted sum mean square error and sum rate optimization," *IEEE Trans. Inf. Theory*, vol. 59, no. 9, pp. 5297–5312, 2013.

[J20] M. Xu, D. Guo, and M. L. Honig, "Downlink noncoherent cooperation without transmitter phase alignment," *IEEE Trans. Wireless Commun.*, vol. 12, no. 8, pp. 3920–3931, 2013.

[J21] M. Agarwal, D. Guo, and M. L. Honig, "Error exponent for Gaussian channels with partial sequential feedback," *IEEE Trans. Inf. Theory*, vol. 59, no. 8, pp. 4757–4766, 2013.

[J22] Y. E. Sagduyu, R. A. Berry, and D. Guo, "Throughput and stability for relay-assisted wireless broadcast with network coding," *IEEE J. Sel. Areas Commun.*, vol. 31, no. 8, pp. 1506–1516, 2013.

[J23] L. Zhang, J. Luo, and D. Guo, "Neighbor discovery for wireless networks via compressed sensing," *Performance Evaluation*, vol. 70, pp. 457–471, 2013.

[J24] M. Xu, D. Guo, and M. L. Honig, "Multicarrier beamforming with limited feedback: a rate distortion approach," *IEEE Trans. Inf. Theory*, vol. 59, no. 2, pp. 916–927, 2013.

[J25] F. Wang, S. C. Liew, and D. Guo, "Wireless MIMO switching with zero forcing and network coding," *IEEE J. Sel. Areas Commun.*, vol. 30, pp. 1452–1463, 2012.

[J26] K. Huang, J. G. Andrews, D. Guo, R. W. Heath Jr., and R. A. Berry, "Spatial interference cancelation for multiantenna mobile ad hoc networks," *IEEE Trans. Inf. Theory*, vol. 58, pp. 1660–1676, Mar. 2012.

[J27] Y. Zhu and D. Guo, "The degrees of freedom of isotropic MIMO interference channels without state information at the transmitters," *IEEE Trans. Inf. Theory*, vol. 58, pp. 341–352, Jan. 2012.

[J28] Y. Wu, D. Guo, and S. Verdú, "Derivative of mutual information at zero SNR: the Gaussian-noise case," *IEEE Trans. Inf. Theory*, vol. 57, pp. 7307–7312, Nov. 2011.

[J29] H. Zhou, P. Fan, and D. Guo, "Joint channel probing and proportional fair scheduling in wireless networks," *IEEE Trans. Wireless Commun.*, vol. 10, pp. 3496–3505, Oct. 2011.

[J30] Y. Zhu and D. Guo, "Ergodic fading Z-interference channels without state information at transmitters," *IEEE Trans. Inf. Theory*, vol. 57, Special Issue on Interference Networks, pp. 2627–2647, May 2011.

[J31] D. Guo, Y. Wu, S. Shamai, and S. Verdú, "Estimation in Gaussian noise: Properties of the minimum mean-square error," *IEEE Trans. Inf. Theory*, vol. 57, pp. 2371–2385, Apr. 2011.

[J32] M. Agarwal, D. Guo, and M. L. Honig, "Limited-rate channel state feedback for multicarrier block fading channels," *IEEE Trans. Inf. Theory*, vol. 56, pp. 6116–6132, Dec. 2010.

[J33] N. Merhav, D. Guo, and S. Shamai, "Statistical physics of signal estimation in Gaussian noise: Theory and examples of phase transition," *IEEE Trans. Inf. Theory*, vol. 56, pp. 1400–1416, Mar. 2010.

[J34] Y. Zhu, D. Guo, and M. L. Honig, "A message-passing approach to joint channel estimation, interference mitigation and decoding," *IEEE Trans. Wireless Commun.*, vol. 8, pp. 6008–6018, Dec. 2009.

[J35] J. Luo and D. Guo, "On the entropy rate of hidden Markov processes observed through arbitrary memoryless channels," *IEEE Trans. Inf. Theory*, vol. 55, pp. 1460–1467, Apr. 2009.

[J36] 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 Trans. Commun.*, vol. 57, pp. 1184–1196, Apr. 2009.

[J37] J. Andrews, N. Jindal, M. Haenggi, R. Berry, S. Jafar, D. Guo, S. Shakkottai, R. Heath Jr, M. Neely, S. Weber, A. Yener, and P. Stone, "Rethinking information theory for mobile ad hoc networks," *IEEE Commun. Mag.*, vol. 46, pp. 94–101, Dec. 2008.

[J38] D. Guo, S. Shamai (Shitz), and S. Verdú, "Mutual information and conditional mean estimation in Poisson channels," *IEEE Trans. Inf. Theory*, vol. 54, pp. 1837–1849, May 2008.

[J39] D. Guo and C.-C. Wang, "Multiuser detection of sparsely spread CDMA," *IEEE J. Sel. Areas Commun.*, vol. 26, Special Issue on Mul-

tiuser Detection for Advanced Communication Systems and Networks, pp. 421–431, Apr. 2008.

[J40] R. R. Müller, D. Guo, and A. Moustakas, "Vector precoding for wireless MIMO systems and its replica analysis," *IEEE J. Sel. Areas Commun.*, vol. 26, Special Issue on Multiuser Detection for Advanced Communication Systems and Networks, pp. 530–540, Apr. 2008.

[J41] F. Meshkati, D. Guo, H. V. Poor, and S. C. Schwartz, "A unified approach to energy-efficient power control inlarge CDMA systems," *IEEE Trans. Wireless Commun.*, vol. 7, pp. 1208–1216, Apr. 2008.

[J42] D. Guo, "Some large linear systems in communications: Estimation, information and statistical physics," *Journal of Physics: Conference Series*, vol. 95, p. 012007, Jan. 2008.

[J43] R. R. Müller, D. Guo, and A. Moustakas, "A quadratic programming problem arising from vector precoding in wireless communications," *Journal of Physics: Conference Series*, vol. 95, p. 012006, Jan. 2008.

[J44] S. Verdú and D. Guo, "A simple proof of the entropy power inequality," *IEEE Trans. Inf. Theory*, pp. 2165–2166, May 2006.

[J45] D. Guo, "Performance of multicarrier CDMA in frequency-selective fading via statistical physics," *IEEE Trans. Inf. Theory*, vol. 52, pp. 1765–1774, Apr. 2006.

[J46] D. Guo, S. Shamai, and S. Verdú, "Mutual information and minimum mean-square error in Gaussian channels," *IEEE Trans. Inf. Theory*, vol. 51, pp. 1261–1282, Apr. 2005.

[J47] D. Guo and S. Verdú, "Randomly spread CDMA: Asymptotics via statistical physics," *IEEE Trans. Inf. Theory*, vol. 51, pp. 1982–2010, June 2005.

[J48] D. Guo, S. Verdú, and L. K. Rasmussen, "Asymptotic normality of linear multiuser receiver outputs," *IEEE Trans. Inf. Theory*, vol. 48, pp. 3080–3095, Dec. 2002.

[J49] D. Guo, L. K. Rasmussen, S. Sun, and T. J. Lim, "A matrix-algebraic approach to linear parallel interference cancellation in CDMA," *IEEE Trans. Commun.*, vol. 48, pp. 152–161, Jan. 2000.

[J50] D. Guo, L. K. Rasmussen, and T. J. Lim, "Linear parallel interference cancellation in long-code CDMA multiuser detection," *IEEE J. Sel. Areas Commun.*, vol. 17, pp. 2074–2081, Dec. 1999.

Conference Papers

[C1] H. Zhou, D. Guo, and M. L. Honig, "Initial access and beamforming in multi-cell mmwave networks using narrowband pilots," in *Proc. Asilomar Conf. Signals, Systems, & Computers*, Pacific Grove, CA, USA, 2018.

[C2] J. Li and D. Guo, "Cloud-based resource allocation and cooperative transmission in large cellular networks," in *Proc. Allerton Conf. Commun., Control, & Computing*, 2017.

[C3] Z. Zhou and D. Guo, "1000-cell global spectrum management," in *Proc. ACM MobiHoc*, 2017.

[C4] B. Zhuang, D. Guo, E. Wei, and M. L. Honig, "Scalable spectrum allocation for large networks based on sparse optimization," in *Proc. IEEE Int. Symp. Inform. Theory*, pp. 2518–2522, June 2017.

[C5] Y. Liu, Y. Shen, D. Guo, and M. Win, "Localization and synchronization in wireless networks using full-duplex radios," in *Proc. IEEE Int. Conf. Commun. (ICC)*, pp. 1–6, May 2017.

[C6] Z. Zhou, X. Chen, D. Guo, and M. L. Honig, "Sparse channel estimation for massive MIMO with 1-bit feedback per dimension," in *Proc. IEEE Wireless Communications and Networking Conf. (WCNC)*, pp. 1–6, Mar. 2017.

[C7] R. Keating and D. Guo, "Multiuser two-way ranging," in *Proc. IEEE Int. Symp. Inform. Theory*, pp. 2764–2768, Barcelona, Spain, 2016.

[C8] C. Zhang, D. Guo, and P. Fan, "Tracking of angles of departure and arrival in a mobile millimeter wave channel," in *Proc. IEEE Int. Conf. Commun. (ICC)*, 2016.

[C9] X. Chen and D. Guo, "A generalized LDPC framework for robust and sublinear compressive sensing," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 4623–4627, Shanghai, China, March 2016.

[C10] Z. Zhou, D. Guo, and M. L. Honig, "Allocation of licensed and unlicensed spectrum in heterogeneous networks," in *Proc. Australian Communications Theory Workshop (AusCTW)*, pp. 59–64, 2016.

[C11] F. Teng and D. Guo, "Resource management in 5G: a tale of two timescales," in *Proc. Asilomar Conf. Signals, Systems, & Computers*, Pacific Grove, CA, USA, 2015.

[C12] M. E. Rasekh, D. Guo, and U. Madhow, "Interference-aware routing and spectrum allocation for millimeter wave backhaul in urban picocells," in *Proc. Allerton Conf. Commun., Control, & Computing*, Monticello, IL, USA, 2015.

[C13] X. Li, D. Guo, H. Yin, and G. Wei, "The public safety wireless broadband network with airdropped sensors," in *Signal and Information Processing (ChinaSIP), 2015 IEEE China Summit and International Conference on*, pp. 443–447, 2015.

[C14] X. Chen and D. Guo, "Robust sublinear complexity Walsh-Hadamard transform with arbitrary sparse support," in *Proc. IEEE Int. Symp. Inform. Theory*, pp. 2573–2577, 2015.

[C15] X. Li, D. Guo, H. Yin, and W. Guo, "Drone-assisted public safety wireless broadband network," in *Proc. 2nd International Workshop on Device-to-Device and Public Safety Communications, IEEE Wireless Communications and Networking Conference*, 2015.

[C16] F. Teng, D. Guo, and M. L. Honig, "Sharing of unlicensed spectrum by strategic operators," in *Proc. IEEE GlobalSIP Symposium on Game Theory for Signal Processing and Communications*, 2014.

[C17] B. Zhuang, D. Guo, and M. L. Honig, "Traffic-driven resource allocation in heterogeneous wireless networks," in *Proc. IEEE GLOBECOM*, 2014.

[C18] X. Chen and D. Guo, "Many-access channels: the Gaussian case with random user activities," in *Proc. IEEE Int. Symp. Inform. Theory*, pp. 3127–3131, Honolulu, HI, USA, 2014.

[C19] T.-Y. Chen, X. Chen, and D. Guo, "Many-broadcast channels: definition and capacity in the degraded case," in *Proc. IEEE Int. Symp. Inform. Theory*, pp. 2569–2573, Honolulu, HI, USA, 2014.

[C20] C. Gil Taborda, F. Pérez-Cruz, and D. Guo, "New information–estimation results for Poisson, binomial and negative binomial models," in *Proc. IEEE Int. Symp. Inform. Theory*, pp. 2207–2211, Honolulu, HI, USA, 2014.

[C21] W. Wang, V. Subramanian, and D. Guo, "Low complexity scheduling algorithms for wireless networks with full duplex state exchange," in *Proc. Conf. Inform. Sciences & Systems*, Princeton, NJ, USA, 2014.

[C22] X. Chen and D. Guo, "Gaussian many-access channels: definition and symmetric capacity," in *Proc. IEEE Inform. Theory Workshop*, Sevilla, Spain, 2013.

[C23] D. Guo, "On information-estimation relationships over binomial and negative binomial models," in *Proc. IEEE Int. Symp. Inform. Theory*, pp. 459–463, Istanbul, Turkey, 2013.

[C24] H. Li and D. Guo, "On the capacity-achieving input for additive inverse Gaussian channels," in *Proc. IEEE Int. Symp. Inform. Theory*, pp. 1829–1833, Istanbul, Turkey, 2013.

[C25] X. Chen, D. Guo, and J. Grosspietsch, "The public safety broadband network: A novel architecture with mobile base stations," in *Proc. IEEE Int. Conf. Commun. (ICC)*, (Budapest, Hungary), 2013.

[C26] F. Wang, X. Yuan, S. C. Liew, and D. Guo, "Wireless MIMO switching: Sum rate optimization," in *IEEE Wireless Commun. Networking Conf.*, pp. 3512–3517, Shanghai, China, 2013.

[C27] F. Teng, D. Guo, M. L. Honig, W. Xiao, and J. Liu, "Power control based on interference pricing in D2D/cellular networks," in *International Workshop on Emerging Technologies for LTE-Advanced and Beyond-4G (Globecom workshop)*, 2012.

[C28] B. Zhuang, M. L. Honig, and D. Guo, "Energy management of dense wireless heterogeneous networks over slow timescales," in *Proc. Allerton Conf. Commun., Control, & Computing*, 2012.

[C29] K. H. Hui, V. Subramanian, D. Guo, and R. A. Berry, "Diffusion of innovation in two-sided markets," in *Proc. Allerton Conf. Commun., Control, & Computing*, 2012.

[C30] F. Wang, S. C. Liew, and D. Guo, "Wireless MIMO switching with MMSE relaying," in *Proc. IEEE Int. Symp. Inform. Theory*, 2012.

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