List of Sample Papers

This sample list gives you some ideas as to where to look for papers and how good papers look like. Please do not limit yourself to this list, but rather add good-quality papers of your own choice.

Special Issues/Reviews/Books on Optimization for Communications/Signal Processing/Networking

[1] Convex Optimization in Signal Processing (Special issue), IEEE Signal Processing Magazine, v.27, n.3, May 2010.

[2] Optimization of MIMO Tranceivers for Realistic Communication Networks: Challenges and Opportunities, IEEE JSAC (special issue), v. 25, N. 7, Sep. 2007. - many relevant papers can be found in this special issue.

[3] Nonlinear Optimization of Communication Systems, IEEE JSAC (special issue), v. 24, N. 8, Aug. 2006. – also a special issue with many relevant papers.

[4] Game Theory in Communication Systems, IEEE JSAC (special issue), v. 26, N. 7, Sep. 2008. – also a special issue.

[5] Cross-Layer Optimized Wireless Multimedia Communications, IEEE JSAC (special issue), v. 25, N. 4, May 2007. – also a special issue.

[6] D. P. Palomar and Y. Jiang, "MIMO transceiver design via majorization theory," Found. Trends Commun. Inf. Theory, vol. 3, no. 4-5, pp. 331–551, 2006

[7] M. Chiang, Geometric Programming for Communication Systems, Foundations and Trends in Communications and Information Theory, Vol. 2, No 1/2 (2005) 1–154.

[8] E. Jorswieck, H. Boche, Majorization and Matrix-Monotone Functions in Wireless Communications, Foundations and Trends in Communications and Information Theory, Vol. 3, No. 6 (2006) 553–701.

[9] M. Chiang, P. Hande, T. Lan, Power Control in Wireless Cellular Networks, Foundations and Trends in Networking, Vol. 2, No. 4 (2007) 381–533.

[10] M. Chiang et al, Layering as Optimization Decomposition: A Mathematical Theory of Network Architectures, Proceedings of the IEEE, Vol. 95, No. 1, January 2007.

[11] P.P. Vaidyanathan, S.M. Phoong, Y.P. Lin, Signal Processing and Optimization for Transceiver Systems, Cambridge University Press, 2010.

[12] E. Björnson and E. Jorswieck, "Optimal Resource Allocation in Coordinated Multi-Cell Systems," Foundations and Trends in Communications and Information Theory, vol. 9, no. 2–3, pp. 113-381, Jan. 2013.

[13] Y. J. Zhang, L. Qian, and J. Huang, "Monotonic Optimization in Communication and Networking Systems," Foundations and Trends in Networking, vol. 7, no. 1, pp. 1-75, Oct. 2013.

Regular Papers

[14] G. Caire, K.R. Kumar, Information-Theoretic Foundations of Adaptive Coded Modulation, Proceedings of the IEEE, v. 95, N. 12, pp. 2274-2298, Dec. 2007.

[15] D.P. Palomar, J.M. Cioffi, and M.A. Lagunas. "Joint Tx-Rx beamforming design for multicarrier MIMO channels: a unified framework for convex optimization," IEEE Transactions on Signal Processing, Vol.51 N.9, pp. 2381-2401, Sep. 2003. (Cited by 237)

[16] M.J. Neely, E. Modiano, C.E. Rohrs, Dynamic Power Allocation and Routing for Time-Varying Wireless Networks, IEEE JSAC, v.23, N. 1, pp. 89-103, Jan. 2005. (188)

[17] R.D. Yates, A Framework for Uplink Power Control in Cellular Radio Systems, IEEE JSAC, vol 13. No 7, pp. 1341- 1347, Sep. 1995. (810)

[18] F. Rashid-Farrokhi, K.J.R. Liu, L. Tassiulas, "Transmit beamforming and power control for cellular wireless systems," IEEE Journal on Selected Areas in Communications, Vol.16, N.8, pp. 1437-1450, Oct. 1998. (Cited by 306)

[19] F. Rashid-Farrokhi, L. Tassiulas, K.J.R. Liu, "Joint optimal power control and beamforming in wireless networks using antenna arrays," IEEE Transactions on Communications, Vol.46, N.10, pp. 1313-1324, Oct. 1998. (Cited by 165)

[20] S.A. Vorobyov, A.B. Gershman and Z. Luo, "Robust adaptive beamforming using worst-case performance optimization," IEEE Transactions on Signal Processing, Vol.51, N.2, pp. 313-324, Feb. 2003. (Cited by 135)

[21] S.A. Vorobyov, A.B. Gershman, Z.-Q. Luo, Robust adaptive beamforming using worst-case performance optimization: a solution to the signal mismatch problem, IEEE Transactions on Signal Processing, v. 51, N. 2, pp. 313-324, Feb. 2003. (

[22] P.S. Chow, J.M. Cioffi, J.A.C. Bingham, "A practical discrete multitone transceiver loading algorithm for data transmission over spectrally shaped channels," IEEE Transactions on Communications, Vol. 43, N.234, pp. 773-775, Feb/Mar/Apr. 1995. (Cited by 366)

[23] S.G. Chua and A.J. Goldsmith, "Variable-rate variable-power MQAM for fading channels," IEEE Transactions on Communication, Vol.45, N.10, pp. 12118-30, Oct. 1997 (Cited by 570)

[24] S.G. Chua and A.J. Goldsmith, "Adaptive coded modulation for fading channels," IEEE Transactions on Communication, Vol.45, N.5, pp. 595-602, May. 1998 (Cited by 223)

[25] L. Li, A.J. Goldsmith, "Capacity and optimal resource allocation for fading broadcast channels .I. Ergodic capacity," IEEE Transactions on Information Theory, Vol.47, N.3, pp. 1083-1102, Mar. 2001, (Cited by 125).

[26] L. Li, A.J. Goldsmith, "Capacity and optimal resource allocation for fading broadcast channels. Part II: Outage capacity," IEEE Transactions on Information Theory, Vol.47, N.3, pp. 1103-1127, Mar. 2001.

[27] X. Liu, E.K.P. Chong, N.B. Shroff. "Opportunistic transmission scheduling with resource-sharing constraints in wireless networks," IEEE Journal on Selected Areas in Communications, Vol.19, N.10, pp. 2053-2064, Oct. 2001. (Cited by 198)

[28] P. Ramanathan, K.M. Sivalingam, P. Agrawal, S. Kishore, "Dynamic resource allocation schemes during handoff for mobile multimedia wireless networks," IEEE Journal on Selected Areas in Communications, Vol.17, N.7, pp. 1270-1283, Jul. 1999. (Cited by 110)

[29] W.T. Webb and R. Steele, "Variable rate QAM for mobile radio," IEEE Transactions on Communication, Vol.43, N.7, pp. 2223-2230, Jul. 1995 (Cited by 229)

[30] C.Y. Wong, R.S. Cheng, K.B. Lataief and R.D. Murch, "Multiuser OFDM with adaptive subcarrier, bit, and power allocation," IEEE Journal on Selected Areas in Communications, Vol.17, N.10, pp. 1747-1758, Oct. 1999. (Cited by 423)

[31] L. Xiao, M. Johansson, S.P. Boyd, "Simultaneous routing and resource allocation via dual decomposition," IEEE Transactions on Communication, Vol.52, N.7, pp. 1136-1144, Jul. 2004. (Cited by 116)

[32] O.T.W. Yu, V.C.M. Leung, "Adaptive resource allocation for prioritized call admission over an ATM-based wireless PCN," IEEE Journal on Selected Areas in Communications, Vol.15, N.7, pp. 1208-1225, Sep. 1997. (Cited by 114)

[33] R.S. Cheng, S. Verdu, "Gaussian Multiaccess Channels with ISI: Capacity Region and Multiuser Water-Filling," IEEE Transactions on Information Theory, Vol.39, No.3, pp. 773-782, May 1993. (180)

[34] A. Demers, S. Keshav, S. Shenker, "Analysis and Simulation of a Fair Queueing Algorithm," SIGCOMM 89: Symposium on Communications Architectures & Protocols, Aug. 1989. (2332)

[35] S.V. Hanly, "An Algorithm for Combined Cell-Site Sec Selection and Power Control to Maximize Cellular Spread Spectrum Capacity," IEEE Journal on Selected Areas in Communications, Vol.35, N.7, pp. 1332-1340, Sep. 1995 (238)

[36] S.A. Jafar, K.S. Gomadam and C. Huang, "Duality and Rate Optimization for Multiple Access and Broadcast Channels With Amplify-and-Forward Relays," IEEE Transactions on Information Theory, Vol.53, No.10, pp. 3350-3369, Oct. 2007.

[37] F.P. Kelly, A.K. Maulloo and D.K.H. Tan, "Rate control for communication networks: shadow prices, proportional fairness and stability," Journal of the Operational Research Society Vol. 49, pp. 237-252, 1998. (2210)

[38] Y.B. Liang, V.V. Veeravalli and H.V. Poor, "Resource Allocation for Wireless Fading Relay Channels: Max-Min Solution," IEEE Transactions on Information Theory, Vol.53, No.10, pp. 3432-3453, Oct. 2007.

[39] X. Lin, N.B. Shroff and R. Srikant, "A Tutorial on Cross-Layer Optimization in Wireless Networks," IEEE Journal on Selected Areas in Communications, Vol.24, N.8, pp. 1452-1463, Aug. 2006

[40] D. Love, R.W. Heath, "Multimode Precoding for MIMO Wireless Systems," IEEE Transactions on Signal Processing, Vol.53 N.10, pp. 3674-3687, Oct. 2005.

[41] D. Love, R.W. Heath, "Limited Feedback Unitary Precoding for Spatial Multiplexing Systems," IEEE Transactions on Information Theory, Vol.51, No.8, pp. 2967-2975, Aug. 2005. (108)

[42] L. Massoulie and J. Roberts, "Bandwidth sharing: objectives and algorithms," IEEE/ACM Transactions on Networking, Vol. 10, N.3, pp. 320-328, June. 2002 (445)

[43] F. Meshkati, M. Chiang, H.V. Poor and S.C. Schwartz, "A Game-Theoretic Approach to Energy-Efficient Power Control in Multicarrier CDMA Systems," IEEE Journal on Selected Areas in Communications, Vol.24, N.6, pp. 1115-1129, Jun. 2006

[44] J. Mo and J. Walrand, "Fair End-to-End Window-Based Congestion Control," IEEE/ACM Transactions on Networking, Vol. 8, N. 5, Oct. 2000. (606)

[45] D.P. Palomar, "Convex Primal Decomposition for Multicarrier Linear MIMO Transceivers," IEEE Transactions on Signal Processing, Vol.53 N.12, pp. 4661-4672, Dec. 2005

[46] D.P. Palomar, and S. Barbarossa, "Designing MIMO Communication Systems:Constellation Choice and Linear Transceiver Design," IEEE Transactions on Signal Processing, Vol.53 N.10, pp. 3804-3818, Oct. 2005

[47] D.P. Palomar, M. Bengtsson, and B. Ottersten, "Minimum BER Linear Transceivers for MIMO Channels via Primal Decomposition," IEEE Transactions on Signal Processing, Vol.53 N.8, pp. 2866-2881, Aug. 2005

[48] D.P. Palomar and M. Chiang, "A Tutorial on Decomposition Methods for Network Utility Maximization," IEEE Journal on Selected Areas in Communications, Vol.24, N.8, pp. 1439-1451, Aug. 2006

[49] D.P. Palomar and J.R. Fonollosa, "Practical Algorithms for a Family of Water-filling Solutions," IEEE Transactions on Signal Processing, Vol.53 N.2, pp. 686-695, Feb. 2005

[50] D.P. Palomar, M.A. Lagunas and J.M. Cioffi, "Optimum Linear Joint Transmit-Receive Processing for MIMO Channels with QoS Constraints," IEEE Transactions on Signal Processing, Vol.53 N.5, pp. 1179-1196, May. 2004

[51] Y. Rong, S. Shahbazpanhi, and A.B. Gershman, "Robust Linear Receivers for Space-Time Block Coded Multiaccess MIMO Systems With Imperfect Channel State Information," IEEE Transactions on Signal Processing, Vol.53 N.8, pp. 3081-3089, Aug. 2005

[52] A. Wiesel, Y.C. Eldar and S. Shamai, "Linear Precoding via Conic Optimization for Fixed MIMO Receivers," IEEE Transactions on Signal Processing, Vol.54 N.1, pp. 161-175, Jan. 2006

[53] A. Yasotharam, "Multirate Zero-Forcing Tx–Rx Design for MIMO Channel Under BER Constraints," IEEE Transactions on Signal Processing, Vol.54 N.6, pp. 2288-2301, Jun. 2006

[54] W. Yu, W. Rhee, S. Boyd and J.M. Cioffi, "Iterative Water-Filling for Gaussian Vector Multiple-Access Channels," IEEE Transactions on Information Theory, Vol.50, No.1, pp. 145-152, Jan 2004. (346)

[55] D.N.C. Tse, S.V. Hanly, Multiaccess Fading Channels–Part I: Polymatroid Structure, Optimal Resource Allocation and Throughput Capacities, IEEE Transactions On Information Theory, Vol. 44, No. 7, pp. 2756-2815, Nov. 1998. (cites: 503).

[56] D.N. Tse, Optimal Power Allocation over Parallel Gaussian Broadcast Channels, IEEE International Symposium on Information Theory, 1997. (cites: 236).

[57] T.C-Y. Ng, W. Yu, Joint Optimization of Relay Strategies and Resource Allocations in Cooperative Cellular Networks, IEEE JSAC, v. 25, N. 2, pp. 328-339, Feb. 2007.

[58] V. Kostina, S. Loyka, On Optimum Power Allocation for the V-BLAST, IEEE Transactions on Communications, v. 56, N. 6, pp. 999-1012, June 2008.

[59] V. Kostina, S. Loyka, Optimum Power and Rate Allocation for Coded V-BLAST: Instantaneous Optimization, IEEE Transactions on Communications, v. 59, N. 10, Oct. 2011, pp. 2841-2850.

[60] V. Kostina, S. Loyka, Optimum Power and Rate Allocation for Coded V-BLAST: Average Optimization, IEEE Transactions on Communications, v. 59, No. 3, pp. 877-887, Mar. 2011

[61] A.B. Gershman, et al. "Convex optimization-based beamforming: From receive to transmit and network designs." *IEEE Signal Processing Magazine*, v. 27, no. 3 pp 62-75, May 2010. (c: 253)

[62] L. Xiao, M. Johansson, S.P. Boyd. "Simultaneous routing and resource allocation via dual decomposition." IEEE Trans. Communications, v. 52, no. 7, pp. 1136-1144, July 2004. (c:500)

[63] M. Chiang, Balancing transport and physical layers in wireless multihop networks: Jointly optimal congestion control and power control, IEEE Journal on Selected Areas in Communications, v. 23, no. 1, pp. 104-116, Jan. 2005. (c:680)

[64] G.J. Sullivan, T. Wiegand, Rate-distortion optimization for video compression, IEEE Signal Processing Magazine, v.15, N. 6, pp. 74-90, Nov 1998 (544).

[65] M Unser, A Aldroubi, M Eden, B-spline signal processing: Part I—Theory, IEEE Trans. Signal Processing, v. 41, N. 2, pp. 821-833, Feb. 1993. (420).

[66] H. Krim, M. Viberg, Two decades of array signal processing research: the parametric approach, IEEE Signal Processing Magazine, v. 13, N. 4, pp. 67-94, Jul. 1996 (769).

[67] J. F. Canny. A computational approach to edge detection. IEEE Trans. Pattern Analysis and Machine Intelligence, v. 8, N.6, pp. 679-698, Nov. 1986 (7807).

[68] S.A. Kassam, H.V. Poor, Robust techniques for signal processing: A survey, Proceedings of the IEEE, v. 73, N,3, pp. 433-481, Mar. 1985. (284).

[69] F. Zhao et al, Collaborative Signal and Information Processing: An Information-Directed Approach, Proceedings of the IEEE, v. 91, N. 8, pp. 1199-1209, Aug. 2003 (182).

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[70] P. Thévenaz, M. Unser, Optimization of Mutual Information for Multiresolution Image Registration, IEEE Transactions on Image Processing, Vol. 9, No. 12, pp. 2083-2099, Dec. 2000 (215).

[71] F. Maes et al, Multimodality Image Registration by Maximization of Mutual Information, IEEE Transactions on Medical Imaging, Vol. 16, No. 2, April 1997 (1804).

[72] S. Meguerdichian et al, Coverage Problems in Wireless Ad-hoc Sensor Networks, IEEE INFOCOM 2001 (717).

[73] L. Doherty et al, Convex Position Estimation in Wireless Sensor Networks, IEEE INFOCOM 2001 (644).

[74] D. Julian M. Chiang, D. O'Neill, S. Boyd, QoS and fairness constrained convex optimization of resource allocation for wireless cellular and ad hoc networks, INFOCOM 2002. (91).

[75] D. Hammarwall, M. Bengtsson, B. Ottersten, On Downlink Beamforming With Indefinite Shaping Constraints, IEEE Transactions on Signal Processing, v. 54, N. 9, Sep. 2006.

[76] J. Li, P. Stoica, Z. Wang, On Robust Capon Beamforming and Diagonal Loading, IEEE Transactions on Signal Processing, v. 51, N. 7, Jul. 2003.

[77] R. G. Lorenz, S.P. Boyd, Robust Minimum Variance Beamforming, IEEE Transactions On Signal Processing, v. 53, N. 5, May 2005.

[78] H. Lebret, S. Boyd, Antenna Array Pattern Synthesis via Convex Optimization, IEEE Transactions on Signal Processing, v. 45, N. 3, Mar. 1997.

[79] M. Chiang et al, Power Control By Geometric Programming, IEEE Transactions on Wireless Communications, v. 6, N. 7, July 2007.

[80] E.J. Candès, T. Tao. "The power of convex relaxation: Near-optimal matrix completion." IEEE Trans. Information Theory, v.56, N.5, pp. 2053-2080, May 2010. (454)

[81] J.A. Tropp, "Just relax: Convex programming methods for identifying sparse signals in noise." IEEE Trans. Information Theory, v.52, N.3, pp. 1030-1051, Mar. 2006. (716)

[82] S. Boyd et al, Randomized Gossip Algorithms, IEEE Trans. Information Theory, v.52, N.6, pp. June 2006. (981)

[83] S. Boyd et al. "Gossip algorithms: Design, analysis and applications." INFOCOM 2005. (400)

[84] R. Storn, K. Price, Differential evolution–a simple and efficient heuristic for global optimization over continuous spaces, Journal of Global Optimization, v. 11, N.4, pp. 341-359, 1997. (8477)

[85] A. Wiesel, Y. C. Eldar and S. Shamai, "Linear precoding via conic optimization for fixed MIMO receivers," *IEEE Transactions on Signal Processing*, vol. 54, no. 1, pp. 161-176, Jan. 2006. (741)

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