

Gerhard Kramer's Publications, January 2021

Dissertations

1. Doctoral Thesis: Directed Information for Channels with Feedback. Konstanz: Hartung-Gorre Verlag, 1998. ETH Series in Information Processing, Vol. 11, Ed. James L. Massey. ISBN 3-89649-379-5.
2. Post Diploma in Information Technology Thesis: Single-User Channel Estimation with Periodic Pilot Sequences for Mobile Radio. ETH Zurich, Switzerland, 1996.
3. Master of Science Thesis: CPM Receiver Issues: The Matched Filter Bank and Sequential Sequence Estimation. Univ. Manitoba, Canada, 1992.
4. Bachelor of Science Thesis: Continuous Measurement of Cerebral Water Content by Time-Domain Reflectometry. Univ. Manitoba, Canada, 1991.

Monographs & Edited Book

1. *Topics in Multi-User Information Theory*, G. Kramer, Foundations and Trends in Commun. and Inf. Theory, Hanover, MA: now Publishers Inc., vol. 4, no. 4-5, pp. 265-444, 2007.
2. *Cooperative Communications*, G. Kramer, I. Marić, and R. D. Yates, Foundations and Trends in Network. Hanover, MA: now Publishers Inc., vol. 1, no. 3-4, pp. 271-425, 2006.
3. *Advances in Network Information Theory*, P. Gupta, G. Kramer, and A. J. van Wijngaarden, Eds., DIMACS Series in Discrete Math. and Theoret. Comp. Sci., vol. 66, Amer. Math. Soc., 2004.

Articles in Books, Newsletters, or Reviews (12 in total)

1. Y.-H. Kim and G. Kramer, "Information theory for cellular wireless networks," in *Information Theoretic Perspectives on 5G Systems and Beyond*, I. Marić, S. Shamai, O. Simeone, eds., Cambridge Univ. Press, Feb 2021
2. G. Kramer, G. Liva, D. Donev, and M. C. Coşkun, "Efficient coding and modulation for satellite links with severe delay constraints," in *Munich Aerospace Report. New Horizons in Space Technology*, Munich Aerospace e. V., pp. 91-105, Apr 2020
3. J. Hou, G. Kramer, and M. Bloch, "Effective secrecy: reliability, confusion and stealth," in *Information Theoretic Security and Privacy of Information Systems*, H. Boche, A. Khisti, H. V. Poor, and R. F. Schaefer, eds., pp. 3-20, Cambridge Univ. Press, Jun 2017
4. G. Kramer, "Teaching IT: An identity for the Gelfand-Pinsker converse," *IEEE Inf. Theory Soc. Newsletter*, vol. 61, no. 4, pp. 4-6, Dec 2011
5. G. Kramer, R. A. Berry, A. El Gamal, H. El Gamal, M. Franceschetti, M. Gastpar, and J. N. Laneman, "Introduction to the Special Issue on Models, Theory, and Codes for Relaying and Cooperation in Communication Networks," *IEEE Trans. Inf. Theory*, vol. 53, no. 10, pp. 3297-3301, Oct 2007
6. G. Kramer, "Communication strategies and coding for relaying," *Wireless Communications*, IMA Volumes in Mathematics and its Applications, vol. 143, P. Agrawal, D. M. Andrews, P. J. Fleming, G. Yin, and L. Zhang, eds., pp. 163-175, Springer: New York, 2007
7. G. Kramer and S. A. Savari, "On networks of two-way channels," in *Algebraic Coding Theory and Information Theory, DIMACS Workshop, Dec. 15-18, 2003*, DIMACS Series in Discrete Math. and Theoret. Comp. Sci., vol. 68, A. Ashikhmin and A. Barg, eds., pp. 133-143, 2005
8. S. Vishwanath, G. Kramer, S. Shamai (Shitz), S. Jafar, and A. Goldsmith, "Capacity bounds for Gaussian vector broadcast channels," in *Multiantenna Channels: Capacity, Coding and Signal Processing, DIMACS Workshop, Oct. 7-9, 2002*, DIMACS Series in Discrete Math. and Theoret. Comp. Sci., vol. 62, G. J. Foschini and S. Verdú, eds., pp. 107-122
9. G. Kramer, J. E. Mazo, and S. A. Savari, "Eulogy for Claude Elwood Shannon," *ACM SIGMOBILE Mobile Comp. and Commun. Review*, vol. 5, no. 1, p. 1, Jan 2001

10. J. Ruprecht, U. Loher, and G. Kramer, "Code time division multiple access," *COST Action 231: Digital Mobile Radio Towards Future Generation System, Final Report*, Ch. 7, pp. 386-414, 1999.
11. C. Harpes, G. G. Kramer, and J. L. Massey, "A generalization of linear cryptanalysis and the applicability of Matsui's piling-up lemma," *Advances in Cryptology - Eurocrypt '95, Lecture Notes in Comp. Sci. No. 921*, L. C. Guillou and J.-L. Quisquater, eds., pp. 24-38, Springer, 1995
12. J. Ruprecht, U. Loher, and G. Kramer, "Code time division multiple access," *Mobile and Personal Commun., Proc. 2nd Joint COST 227-231 Workshop on Mobile and Personal Commun., Florence, Italy, April 20-21, 1995*, E. Del Re, ed., pp. 317-325, Elsevier, 1995

Submitted Journal Articles

1. F. J. García-Gómez and G. Kramer, "Mismatched models to lower bound the capacity of dual-polarization optical fiber channels," *IEEE/OSA J. Lightw. Technol.*, submitted Dec 2020
2. P. Schulte, R. A. Amjad, T. Wiegart, and G. Kramer, "Invertible low-divergence coding," *IEEE Trans. Inf. Theory*, submitted Oct 2020

Journal Articles (68 in total)

1. F. J. García-Gómez and G. Kramer, "Mismatched models to lower bound the capacity of optical fiber channels," *IEEE/OSA J. Lightw. Technol.*, vol. 38, no. 24, pp. 6779-6787, Dec 15, 2020
2. V. Sidorenko, W. Li, O. Günlü, and G. Kramer, "Skew convolutional codes," *Entropy*, vol. 22, no. 12, article 1364, Dec 2020
3. A. Gohari, O. Günlü, and G. Kramer, "Coding for positive rate in the source model key agreement problem," *IEEE Trans. Inf. Theory*, vol. 66, no. 10, pp. 6303-6323, Oct 2020
4. E. Sula, M. Gastpar, and G. Kramer, "Sum-rate capacity for symmetric Gaussian multiple access channels with feedback," *IEEE Trans. Inf. Theory*, vol. 66, no. 5, pp. 2860-2871, May 2020
5. S. Dierks, G. Kramer, B. Panzner, and W. Zirwas, "Information rates of precoding for massive MIMO and base station cooperation in an indoor scenario," *EURASIP J. Wireless Commun. Network.*, vol. 2020:22, Jan 2020
6. O. Günlü, O. İşcan, V. Sidorenko, and G. Kramer, "Code constructions for physical unclonable functions and biometric secrecy systems," *IEEE Trans. Inf. Forensics Sec.*, vol. 14, no. 11, pp. 2848-2858, Nov 2019
7. M. Thakur and G. Kramer, "Quasi-concavity for Gaussian multicast relay channels," *Entropy*, vol. 21, no. 2, article 109, Jan 2019
8. O. Günlü and G. Kramer, "Privacy, secrecy, and storage with multiple noisy measurements of identifiers," *IEEE Trans. Inf. Forensics Security*, vol. 13, no. 11, pp. 2872-2883, Nov 2018
9. M. Leinonen, M. Codreanu, M. Juntti, and G. Kramer, "Rate-distortion performance of lossy compressed sensing of sparse sources," *IEEE Trans. Commun.*, vol. 66, no. 10, pp. 4498-4512, Oct 2018
10. G. Kramer, "Autocorrelation function for dispersion-free fiber channels with distributed amplification," *IEEE Trans. Inf. Theory*, vol. 64, no. 7, pp. 5131-5155, Jul 2018
11. O. Günlü, T. Kernetzky, O. İşcan, V. Sidorenko, G. Kramer, and R. F. Schaefer, "Secure and reliable key agreement with physical unclonable functions," *Entropy*, Special Issue on Information Theoretic Security, vol. 20, no. 5, article 340, May 2018
12. J. García, H. Ghazlan, and G. Kramer, "Energy conservation in optical fibers with distributed brick-walls filters," *IEEE/OSA J. Lightw. Technol.*, vol. 36, no. 9, pp. 1626-1633, May 2018
13. S. Saeedi Bidokhti, G. Kramer, and S. Shamai (Shitz), "Capacity bounds on the downlink of symmetric, multi-relay, single receiver C-RAN networks," *Entropy*, vol. 19, no. 11, article 610, Nov 2017
14. H. Ghazlan and G. Kramer, "Models and information rates for multiuser optical fiber channels with nonlinearity and dispersion," *IEEE Trans. Inf. Theory*, vol. 63, no. 10, pp. 6440-6456, Oct 2017

15. Z. Goldfeld, G. Kramer, and H. H. Permuter, "Broadcast channels with privacy leakage constraints," *IEEE Trans. Inf. Theory*, vol. 63, no. 8, pp. 5138-5161, Aug 2017
16. A. Thangaraj, G. Kramer, and G. Böcherer, "Capacity bounds for discrete-time, amplitude-constrained, additive white Gaussian noise channels," *IEEE Trans. Inf. Theory*, vol. 63, no. 7, pp. 4172-4182, Jul 2017
17. H. Ghozlan and G. Kramer, "Models and information rates for Wiener phase noise channels," *IEEE Trans. Inf. Theory*, vol. 63, no. 4, pp. 2376-2393, Apr 2017
18. Z. Goldfeld, G. Kramer, H. H. Permuter, and P. Cuff, "Strong secrecy for cooperative broadcast channels," *IEEE Trans. Inf. Theory*, vol. 63, no. 1, pp. 469-495, Jan 2017
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24. T. Koch and G. Kramer, "On noncoherent fading relay channels at high signal-to-noise ratio," *IEEE Trans. Inf. Theory*, vol. 59, no. 4, pp. 2221-2241, Apr 2013
25. R. Timo, A. Grant, and G. Kramer, "Lossy broadcasting with complementary side information," *IEEE Trans. Inf. Theory*, vol. 59, no. 1, pp. 104-131, Jan. 2013
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27. G. Kramer and S. M. S. Tabatabaei Yazdi, "Network coding for line networks with broadcast channels," *Entropy*, vol. 14, no. 10, pp. 1813-1828, Sep 2012
28. G. Zeitler, A. C. Singer, and G. Kramer, "Low-precision A/D conversion for maximum information rate in channels with memory," *IEEE Trans. Commun.*, vol. 60, no. 9, pp. 2511-2521, Sep 2012
29. G. Zeitler, G. Kramer, and A. C. Singer, "Bayesian parameter estimation using single-bit dithered quantization," *IEEE Trans. Signal Proc.*, vol. 60, no. 6, pp. 2713-2726, Jun 2012
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(Awarded the 2005 IEEE Communications Society Stephen O. Rice Prize)
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65. G. Kramer, "Capacity results for the discrete memoryless network," *IEEE Trans. Inf. Theory*, vol. 49, no. 1, pp. 4-21, Jan 2003
66. G. Kramer, "Feedback strategies for white Gaussian interference networks," *IEEE Trans. Inf. Theory*, vol. 48, no. 6, pp. 1423-1438, June 2002. See also "Correction to "Feedback strategies for white Gaussian interference networks," and a capacity theorem for Gaussian interference channels with feedback," *IEEE Trans. Inf. Theory*, vol. 50, no. 6, pp. 1373-1374, Jun 2004.
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68. G. Kramer, E. R. Cardoso, and E. Shwedyk, "Dielectric measurement of cerebral water content using a network analyzer," *Neurological Research*, vol. 14, pp. 255-258, Jun 1992

Conference Papers (125 in total, recent papers listed)

1. V. Sidorenko, W. Li, O. Günlü, and G. Kramer, "On skew convolutional codes," *IEEE Inf. Theory Workshop*, Riva del Garda, Italy, Apr 11-15, 2021
2. V. Sidorenko, W. Li, and G. Kramer "On interleaved rank metric codes," *Int. Workshop on Algebraic Combin. Coding Theory*, Bulgaria, Oct 11-17, 2020
3. T. Jerkovits, O. Günlü, V. Sidorenko, and G. Kramer "Nested tailbiting convolutional codes for secrecy, privacy, and storage," *ACM Workshop Inf. Hiding and Multimedia Security*, Denver, CO, pp. 79-89, Jun 22-25, 2020

4. D. Lentner and G. Kramer, "Stealth communication with vanishing power over binary symmetric channels," *IEEE Int. Symp. Inf. Theory*, Los Angeles, CA, pp. 822-827, Jun 21-26, 2020
5. M. Pikus, W. Xu, and G. Kramer, "Finite-precision implementation of arithmetic coding based distribution matchers," *IEEE Global Telecomm. Conf. (Globecom)*, Waikoloa, HI, Dec 9-13, 2019
6. W. Li, V. Sidorenko, T. Jerkovits, and G. Kramer, "On maximum-likelihood decoding of time-varying trellis codes," *IEEE Int. Symp. Problems Redund. Inf. Control Sys.*, Moscow, Russian Federation, Oct 21-25, 2019
7. O. Günlü, R. F. Schaefer, and G. Kramer, "Private authentication with physical identifiers through broadcast channel measurements," *IEEE Inf. Theory Workshop*, Visby, Sweden, Aug 25-28, 2019
8. M. Kobayashi, H. Hamad, G. Kramer, and G. Caire, "Joint state sensing and communication over memory-less multiple access channels," *IEEE Int. Symp. Inf. Theory*, Paris, France, pp. 270-274, Jul 7-12, 2019
9. F. Steiner and G. Kramer, "Optimization of bit mapping and quantized decoding for off-the-shelf protograph LDPC codes with application to IEEE 802.3ca," *Int. Symp. Turbo Codes & Iterative Inf. Proc.*, Hong Kong, pp. 1-5, Dec 3-7, 2018
10. A. Gohari, O. Günlü, and G. Kramer, "On achieving a positive rate in the source model key agreement problem," *IEEE Int. Symp. Inf. Theory*, Vail, CO, pp. 2659-2663, Jun 17-22, 2018
11. M. Kobayashi, G. Caire, and G. Kramer, "Joint state sensing and communication with receiver state information," *IEEE Int. Symp. Inf. Theory*, Vail, CO, pp. 111-115, Jun 17-22, 2018
12. E. Sula, M. Gastpar, and G. Kramer, "Sum-rate capacity for the Gaussian multiple access channel with feedback," *IEEE Int. Symp. Inf. Theory*, Vail, CO, pp. 306-310, Jun 17-22, 2018
13. A. Nedelcu, F. Steiner, G. Kramer, M. Staudacher, P. Baracca, W. Zirwas, R. S. Ganesan and S. Wesemann, "Quantized precoding for MIMO downlink channels with MAGIQ," *ITG Workshop on Smart Antennas*, Bochum, Germany, pp. 1-8, Mar 14-16, 2018
14. F. Steiner, F. Da Ros, M. P. Yankov, G. Böcherer, P. Schulte, S. Forchhammer, and G. Kramer, "Experimental verification of rate flexibility and probabilistic shaping by 4D signaling," *Optical Fiber Commun. (OFC) Conf.*, San Diego, CA, pp. 1-3, Mar 11-15, 2018

Invited Conference & Workshop Papers (43 in total, recent papers listed)

1. E. Ben Yacoub, G. Liva, and G. Kramer, "Efficient evaluation of asymptotic trapping set enumerators for irregular LDPC code ensembles," *Int. Zurich Seminar Inf. Commun.*, Zurich, Switzerland, Feb 26-28, 2020
2. P. Schulte, W. Labidi, and G. Kramer, "Joint decoding of distribution matching and error control codes," *Int. Zurich Seminar Inf. Commun.*, Zurich, Switzerland, Feb 26-28, 2020

Patents (17 in total, selected patents listed)

1. P. Yuan, G. Boecherer, P. Schulte, G. Kramer, R. Boehnke, and W. Xu, "Error detection using symbol distribution in a system with distribution matching and probabilistic amplitude shaping," U.S. Patent 10,880,037, issued Dec 29, 2020
2. W. Zirwas, B. Panzner, R. S. Ganesan, M. Staudacher, and G. Kramer, "Channel estimation in communications," Eur. Patent EP3381148, granted Feb 26, 2020
3. G. Kramer and C. Nuzman, "Simultaneous estimation of multiple channel coefficients using a common probing sequence," U.S. patent 8,218,419, issued Jul 10, 2012
(Awarded a 2012 Thomas Alva Edison Patent Award)