Henry D. Pfister

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EDUCATION

04/2000–03/2003	**Ph.D., University of California, San Diego, California** Department of Electrical and Computer Engineering Dissertation: *"On the capacity of finite-state channels and the analysis of convolutional accumulate-m codes"* under Professor Paul H. Siegel.
09/1997–03/2000	**M.S., University of California, San Diego, California** Department of Electrical and Computer Engineering under Professor Paul H. Siegel.
09/1990–03/1995	**B.S., University of California, San Diego, California** Department of Physics.

ACADEMIC EXPERIENCE

07/2025–present	**Addy Family Professor** of Electrical and Computer Engineering at Duke University.
04/2024–06/2025	**Jeffrey N. Vinik Professor** of Electrical and Computer Engineering at Duke University.
07/2019–present	**Professor** of Mathematics (secondary) at Duke University.
07/2019-03/2024	**Professor** of Electrical and Computer Engineering at Duke University.
08/2016–06/2019	**Associate Professor** of Mathematics (secondary) at Duke University.
08/2014–06/2019	**Associate Professor** of Electrical and Computer Engineering at Duke University.
06/2012–07/2014	**Associate Professor** of Electrical and Computer Engineering at Texas A&M University in College Station, TX.
08/2006–05/2012	**Assistant Professor** of Electrical and Computer Engineering at Texas A&M University in College Station, TX.
01/2005–12/2005	**Post-Doctoral Researcher** in the School of Computer and Communication Sciences at the Swiss Federal Institute of Technology, Lausanne.

INDUSTRIAL EXPERIENCE

05/2003–12/2004 **Senior Engineer** at Qualcomm, Inc. in San Diego, CA.
Developed practical interference cancellation for 3G CDMA systems.

HONORS AND AWARDS

2025 IEEE Information Theory Society Paper Award

2024 Invited Lecturer for the Joint Telematics Group and IEEE Information Theory Society Summer School on Signal Processing, Communications and Networks

2024 Bass Fellow and Jeffrey N. Vinik Chair, Duke University

2021 IEEE Information Theory Society Paper Award

2016 Best Paper Award at the 2016 Symposium on the Theory of Computing (STOC)

2016 Invited Lecturer for the European School of Information Theory

2015-2016 Distinguished Lecturer for the IEEE Information Theory Society

2014 Invited Lecturer for the North American School of Information Theory

2010 Outstanding Professor Award
Electrical and Computer Engineering Department, Texas A&M University

2008 National Science Foundation CAREER Award

2007 IEEE COMSOC Best Paper in Signal Processing and Coding for Data Storage

TEACHING EXPERIENCE

Undergraduate	Graduate
Probability (2011)	Advanced Channel Coding (2012,2014)
Digital Communications (2008-10,2012)	Information Theory (2011)
Machine Learning Senior Design (2019-23)	Vector Space Methods (2008-09,2016-23)
Signals and Systems (2013)	Channel Coding (. . .,2012-13,2017,2019)
Digital Audio Processing (2015,2017-19)	Graphical Models and Inference (2014)

SUPERVISED STUDENTS

Student	Degree	Thesis Title
Shrigyan Brahmachari	Ph.D. ~2028	TBD (joint with Iman Marvian)
Mert Gökduman	Ph.D. ~2027	TBD
Jiaai Liu	M.S. 2020	Supervised MS Project without Thesis
Zeyu Chen	M.S. 2020	Supervised MS Project without Thesis
Qizhang Feng	M.S. 2020	Supervised MS Project without Thesis
Yi Luo	M.S. 2019	Supervised MS Project without Thesis
Ye Tao	M.S. 2019	Supervised MS Project without Thesis
Avijit Mandal	Ph.D. ~2026	TBD
Sarah Brandsen	Ph.D. 09/21	Locally Adaptive Potocols for Quantum State Discrimination
Narayanan Rengaswamy	Ph.D. 05/20	Classical Coding Approaches to Quantum Applications
Mengke Lian	Ph.D. 12/19	Belief Propagation with Deep Unfolding for High-dimensional Inference in Communication Systems
Mohammad Reza Sanatkar	Ph.D. 12/16	The Dynamics of Polarized Beliefs in Networks Governed by Viral Diffusion and Media Influence
Santhosh Kumar	Ph.D. 12/15	Capacity-Achieving Coding Mechanisms: Spatial Coupling and Group Symmetries
Fatemeh Hamidi-Sepehr	Ph.D. 05/14	On the Performance Analysis of Block Codes over Unreliable Channels in Delay-Sensitive Communications
Yung-Yih Jian	Ph.D. 08/13	On the Analysis of Spatially-Coupled GLDPC Codes and the Weighted Min-Sum Algorithm
Arvind Yedla	Ph.D. 08/12	Universality for Multi-Terminal Problems via Spatial Coupling
Phong Nguyen	Ph.D. 05/12	Advanced Coding Techniques with Applications to Storage Systems
Byung-Hak Kim	Ph.D. 05/12	Joint Equalization and Decoding via Convex Optimization
Fan Zhang	Ph.D. 05/10	LDPC Codes over Large Alphabets and their Applications to Compressed Sensing and Flash Memory
Aparna Khare	M.S. 12/10	Capacity and Coding for 2D Channels
Sirish Boddikurapati	M.S. 12/09	Sequential Monte Carlo Methods with Applications to Communication Channels
Chia-Wen Wang	M.S. 07/08	Bounds on the MAP Threshold of Iterative Decoding Systems with Erasure Noise

INVITED SEMINARS

"The Intersection between Compressed Sensing and Error Correction,"
Sampling Theory and Applications (SAMPTA), Vienna, Austria, July 31, 2025.

"Quantum Error Correction: Overview and Recent Results," Keynote Speaker,
International Symposium on Topics in Coding (ISTC), Los Angeles, August 20, 2025.

"Quantum Low-Density Parity-Check Code Constructions and Decoders,"
ECE Distinguished Colloquium, University of Illinois at Urbana-Champiagn (UIUC), April 17, 2025.

"Boolean Functions and Error-Correcting Codes: Why Reed-Muller Codes Achieve Capacity,"
Joint Telematics Group / IEEE Information Theory Society Summer School, IIT Hyderabad, July 2024.

"Short Block Codes: A Safari Experience in the Error Correction Zoo," Keynote Speaker,
International Symposium on Topics in Coding (ISTC), Brest, France, September 7, 2023.

"An Information-Theoretic Perspective on Successive-Cancellation List Decoding,"
Information Theory and Applications Workshop, San Diego, February 2022.

"Reed-Muller Codes Achieve Capacity on BMS Channels,"
STOC 22: Workshop on Recent Advances in Coding Theory, Rome, Italy, June 23rd, 2022.

"An Information-Theoretic Perspective on Successive-Cancellation List Decoding,"
Information Theory and Applications Workshop, San Diego, May 25th, 2022.

"Symmetry in Communications and Machine Learning,"
International Symposium on Topics in Coding, Montreal, August 31st, 2021.

"Recent Advances in Polar Codes,"
Technical University of Munich (TUM), July 14, 2020.

"Pruning Machine Learning Models for Communications,"
2020 Workshop on Machine Learning for Communications (MLCOM), Israel, Sep. 8, 2020.

"Insight from Simple Questions: Three Examples,"
Jack Keil Wolf Lecture on Information Theory and Applications, UC San Diego, Dec. 1, 2017.

"Capacity via Symmetry: Extensions and Practical Consequences,"
MIT LIDS Seminar Series, April 4, 2017.

"Graphical Models and Inference: Insights from Spatial Coupling,"
IEEE Information Theory Society Distinguished Lecture
Lund University, Sweden, September 16th, 2016.

"Capacity Achieving Codes: There and Back Again,"
European School of Information Theory, Chalmers University, Gothenburg, Sweden, April 6th, 2016.

"Reed-Muller Codes Achieve Capacity on Erasure Channels,"
ECE Department, University of Illinois, Urbana Champaign, Nov. 16, 2015
Science of Information Day, Princeton University, Sept. 25, 2015.

"A Brief Introduction to Spatially-Coupled Codes and Threshold Saturation,"
Chinese University of Hong Kong, June 22, 2015.

"Symmetric Product Codes,"
Coding: From Practice to Theory Workshop, Simons Institute, UC Berkeley, Feb. 13, 2015.

"A Brief Introduction to Spatially-Coupled Codes and Threshold Saturation,"
North American School of Information Theory, University of Toronto, June 18-21, 2014.

"Graphical Models and Inference: Breakthroughs and Insight from Spatial Coupling,"
Duke University, March 17th, 2014.

"From BP to MAP via Spatial Coupling,"
Wireless Networking and Communication Seminar, University of Texas, Austin, Nov. 9th, 2012.

"A Simple Proof of Threshold Saturation for Coupled Scalar Recursions,"
Stanford University, August 17th, 2012,
Summer Research Institute, École Polytechnique Fédérale de Lausanne, June 7th, 2012.

"Applications of spatial coupling in communications, computer science, signal processing, and statistical physics – an overview," CAACT Workshop: Aspects of Coding Theory,
Centre Interfacultaire Bernoulli, École Polytechnique Fédérale de Lausanne, July 25-29, 2011.

"Information Theory and Coding for Compressed Sensing,"
Center for Wireless Communications Ericsson Seminar Series, UC San Diego, March 2009.

"The Derivatives of Entropy Rate and Capacity for Finite-State Channels,"
Workshop on Entropy of Hidden Markov Processes and Connections to Dynamical Systems,
Banff International Research Station (BIRS), Banff, Canada, October 2007.

"Interleaved and Lifted Reed-Solomon Codes: New Perspectives and Constructions,"
Swiss Federal Institute of Technology, Zurich, July 2007.

"Capacity-Achieving Codes for the BEC with Bounded Complexity,"
Texas A&M University, April 2006.

"Modulation and Coding for Satellite Communications,"
SatNEx Summer School, Pisa, Italy, August 2005.

"On the Capacity of Finite-State Channels,"
Technion Institute, Haifa, Israel, March 2005.

INVITED TALKS

"Reed-Muller Codes on Classical-Quantum Channels and the Holevo Capacity,"
Information Theory and Applications Workshop, San Diego, February 2025.

"Error probability bounds for nested sequences of symmetric codes,"
Information Theory and Applications Workshop, San Diego, February 2024.

"Belief-Propagation with Quantum Messages for Polar Codes on Classical-Quantum Channels,"
Information Theory and Applications Workshop, San Diego, February 2023.

"Reed-Muller Codes Achieve Capacity on BMS Channels,"
Information Theory and Applications Workshop, San Diego, February 2022.

"Bounds on the List Size of Successive Cancellation List Decoding,"
Intl. Conference on Signal Processing and Communications, Indian Institute of Science, July 2020.

"Reinforcement Learning for Channel Coding,"

International Zurich Seminar (IZS), February 2020.

"Reinforcement Learning for Channel Coding,"
DLR-TUM Workshop on Random Access and Coding, Feb. 24, 2020.

"Learned Belief-Propagation Decoding with Simple Scaling and SNR Adaptation,"
Information Theory and Applications Workshop, San Diego, February 2019.

"Decoding Reed–Muller Codes Using Minimum-Weight Parity Checks,"
Information Theory and Applications Workshop, San Diego, February 2018.

"Sharp Thresholds for Weakly Symmetric Boolean Functions and Capacity-Achieving Cyclic Codes,"
Information Theory and Applications Workshop, San Diego, February 2017.

"Near-Optimal Finite-Length Scaling for Polar Codes over Large Alphabets,"
Information Theory and Applications Workshop, San Diego, February 2016.

"Symmetric product codes,"
Information Theory and Applications Workshop, San Diego, February 2015.

"Practical aspects of spatially-coupled codes,"
Information Theory and Applications Workshop, San Diego, February 2014.

"Spatial coupling, potential functions, and the Maxwell construction,"
Information Theory and Applications Workshop, San Diego, February 2013.

"On the queueing behavior of Gilbert-Elliott channels in the rare-transition regime,"
Information Sciences and Systems (CISS), Princeton, March 2012.

"Spatial coupling and information crystallization,"
Information Theory and Applications Workshop, San Diego, February 2012.

"Achieving universality in practice via spatial coupled systems,"
Information Theory and Applications Workshop, San Diego, February 2011.

"A rate-distortion perspective on multiple decoding attempts for Reed-Solomon codes,"
Information Theory and Applications Workshop, San Diego, February 2010.

"Compressed sensing and linear codes over real numbers,"
Information Theory and Applications, San Diego, February 2008.

"Rediscovering our roots: Coding theory and Reed-Solomon codes,"
AMS Joint Mathematics Meetings, Special Session on Coding Theory, New Orleans, January 2007.

"Capacity-achieving ensembles of accumulate-repeat-accumulate codes for the erasure channel with bounded complexity," Information Theory and Applications Workshop, San Diego, February 2006.

PROFESSIONAL SERVICE

Chair of Implementation Competition, *13th Intl. Symposium on Topics in Coding*, Los Angeles, 2025

Technical Program Committee, *13th Intl. Symposium on Topics in Coding*, Los Angeles, USA, 2025

Technical Program Committee, *12th Intl. Symposium on Topics in Coding*, Brest, France, 2023

Technical Program Committee, *IEEE Intl. Symp. on Inform. Theory*, Taipei, Taiwan, 2023

Co-Chair Technical Prog. Committee, *IEEE Intl. Symp. on Inform. Theory*, Melbourne, Australia, 2021

Member IEEE Information Theory Society (ITSOC) Board of Governors (BoG) 2019–2024

Technical Program Committee, *10th Intl. Symposium on Turbo Codes*, Hong Kong, China, 2018

Technical Program Committee, *IEEE Inform. Theory Workshop*, Guangzhou, China, 2018

General Chair, IEEE ITSOC North American School of Information Theory, Duke University, 2016

Associate Editor in Coding Theory, IEEE Transactions on Information Theory, 2013-2016

Technical Program Committee, *IEEE Intl. Symp. on Inform. Theory*, Vail, Colorado, 2018

Technical Program Committee, *IEEE Intl. Symp. on Inform. Theory*, Hong Kong, China, 2015

Technical Program Committee, *8th Intl. Symposium on Turbo Codes*, Bremen, Germany, 2014

Technical Program Committee, *IEEE Intl. Symp. on Inform. Theory*, Istanbul, Turkey, 2013

Technical Program Committee, *7th Intl. Symposium on Turbo Codes*, Gothenburg, Sweden, 2012

Technical Program Committee, *IEEE Intl. Symp. on Inform. Theory*, Cambridge, MA, 2012

Technical Program Committee, *IEEE GLOBECOM*, Houston, TX, 2011

Co-Chair *IEEE GLOBECOM* Workshop on Emerging Memory Technologies, Miami, FL, 2010

Technical Program Committee, *IEEE Intl. Symp. on Inform. Theory*, Austin, TX, 2010

Co-Chair General Symposium, *IEEE GLOBECOM*, New Orleans, 2008

Technical Program Committee, *5th Intl. Symposium on Turbo Codes*, Lausanne, Switzerland, 2008

Technical Program Committee, *IEEE Inform. Theory Workshop*, Lake Tahoe, 2007

Technical Program Committee, *IEEE Intl. Symp. on Inform. Theory*, Nice, France, 2007

Reviewer for IEEE Transactions on Information Theory (> 30 papers since 2011)

Reviewer for IEEE Communications Letters (4 papers since 2011)

Reviewer for IEEE Transactions on Communications (9 papers since 2008)

Reviewer for NSF Research Proposals (4 panels and 3 special requests since 2009)

RESEARCH FUNDING

National Science Foundation NSF-BSF CISE CCF CIF Program, PI, 2024-2027

"Neural Estimation of Statistical Divergences: Theoretical Foundations and Applications to Communication Systems"

National Science Foundation subcontract from University of Maryland, 2021-2026

"Quantum Leap Challenge Institute for Robust Quantum Simulation"

National Science Foundation CISE CCF CIF Program, PI, 2021-2024
"QODED: Quantum Codes Optimized for the Dynamics between Encoded Computation and Decoding Using Classical Coding Techniques"

Army Research Office, Co-PI, 2020-2024
"Simplifying Quantum Characterization Through Physical Symmetries, Machine Learning, and a Top-Down Approach"

National Science Foundation CISE CCF FET Program, PI, 2019-2022
"Efficient Inference Tools for Quantum Systems: Algorithms, Applications, and Analysis"

National Science Foundation CISE Program, PI, 2019-2022
"Improving Quantum Computing and Classical Communication using Discrete Sets"

National Science Foundation CISE Program, PI, 2017-2020
"Capacity via Symmetry"

National Science Foundation ECCS Program, PI, 2016-2019
"Advanced Coding Techniques for Next-Generation Optical Communications"

National Science Foundation CISE CCF Program, PI, 2013-2016
"Design and Analysis of Spatially-Coupled Coding Systems"

National Science Foundation CISE CCF Program, PI, 2012-2015
"Design and Analysis of Novel Compressed Sensing Algorithms via Connections with Coding Theory"

National Science Foundation CISE CCF Program, co-PI, 2008-2011
"Fundamental Limits in Delay-Constrained Wireless Communication"

Texas Higher Education Coordinating Board ARP, co-PI, 2008-2010
"Enabling Delay-Sensitive Multihop Wireless Communications"

National Science Foundation ECCS GOALI Program, co-PI, 2008-2011
"Advanced Coding and Signal Processing for Magnetic Recording: From Theory to Implementation"

National Science Foundation CAREER Award, PI, 2008-2013
"Information Theory and Iterative Decoding for Finite-State Channels"

Qatar National Research Fund, co-PI, 2007-2010
"Universal Signaling Schemes for Multimedia Transmission over Wireless Networks"

PATENTS AND PUBLISHED PATENT APPLICATIONS

US-20210074380-A1	Reverse concatenation of error-correcting codes in DNA data storage
US 10693500	Systems and methods for decoding forward error correction ... component codes

US 8959418B1	Forward error correction
US 2011/0069735	Method and apparatus for canceling pilot int. in a wireless comm. system
US 2010/0050001	Peer-to-peer communications
US 2006/0142041	Adaptation of transmit subchannel gains in a system with int. cancellation
US 2006/0141935	Joint interference cancellation of pilot, overhead and traffic channels
US 2006/0141934	Traffic interference cancellation
US 2006/0141933	Channel estimation for interference cancellation
US 2006/0007895	Method and apparatus for canceling pilot int. in a wireless comm. system
US 2005/0207384	Signal acquisition in peer-to-peer spread-spectrum communications
US 2005/0135262	Low-complexity, capacity-achieving code for communication systems
US 2005/0111383	Peer-to-peer communications
US 2005/0013350	Method and apparatus for canceling pilot int. in a wireless comm. system

BOOK CHAPTERS AND THESES

[B1] H. D. Pfister, *On the Capacity of Finite State Channels and the Analysis of Convolutional Accumulate-m Codes*. PhD thesis, University of California, San Diego, CA, USA, March 2003.

[B2] G. Reeves and H. Pfister, "Understanding phase transitions via mutual information and MMSE," in *Information-Theoretic Methods in Data Science* (M. R. D. Rodrigues and Y. C. Eldar, eds.), ch. 7, Cambridge University Press, 2020. arXiv preprint arXiv:1907.02095.

PEER-REVIEWED JOURNAL PAPERS

[J1] H. Yao*, M. Gökduman*, and H. D. Pfister, "Cluster decomposition for improved erasure decoding of quantum LDPC codes," *IEEE J. Select. Areas Inform. Theory*, 2025.

[J2] Z. Aharoni, B. Huleihel, H. D. Pfister, and H. H. Permuter, "Data-driven neural polar decoders for unknown channels with and without memory," *IEEE Trans. Inform. Theory*, 2024.

[J3] A. Khazraei, H. Pfister, and M. Pajic, "Attacks on perception-based control systems: Modeling and fundamental limits," *IEEE Trans. Autom. Control*, 2024.

[J4] G. Reeves and H. D. Pfister, "Reed–Muller codes on BMS channels achieve vanishing bit-error probability for all rates below capacity," *IEEE Trans. Inform. Theory*, 2023. **IEEE ITSOC 2025 Paper Award**.

[J5] H. D. Pfister, C. Piveteau, J. M. Renes, and N. Rengaswamy*, "Belief propagation for classical and quantum systems: Overview and recent results," *IEEE BITS the Information Theory Magazine*, 2023.

[J6] M. C. Coşkun, G. Liva, A. G. i Amat, M. Lentmaier, and H. D. Pfister, "Successive cancellation decoding of single parity-check product codes: Analysis and improved decoding," *IEEE Trans. Inform. Theory*, 2022.

[J7] S. Brandsen*, M. Lian*, K. D. Stubbs, N. Rengaswamy*, and H. D. Pfister, "Adaptive procedures for discriminating between arbitrary tensor-product quantum states," *Phys. Rev. A*, vol. 106, no. 1, p. 012408, 2022.

[J8] M. C. Coşkun and H. D. Pfister, "An information-theoretic perspective on successive cancellation list decoding and polar code design," *IEEE Trans. Inform. Theory*, vol. 68, no. 9, pp. 5779–5791, 2022.

[J9] I. Tal, H. D. Pfister, A. Fazeli, and A. Vardy, "Polar codes for the deletion channel: Weak and strong polarization," *IEEE Trans. Inform. Theory*, 2021.

[J10] N. Rengaswamy*, K. P. Seshadreesan, S. Guha, and H. D. Pfister, "Belief propagation with quantum messages for quantum-enhanced classical communications," *npj Quantum Inf.*, vol. 7, p. 97, 6 2021.

[J11] A. Buchberger, C. Häger*, H. D. Pfister, L. Schmalen, and A. Graell i Amat, "Pruning and quantizing neural belief propagation decoders," *IEEE J. Select. Areas Commun.*, 2020.

[J12] C. Häger* and H. D. Pfister, "Physics-based deep learning for fiber-optic communication systems," *IEEE J. Select. Areas Commun.*, vol. 39, no. 1, pp. 280–294, 2020.

[J13] R. M. Butler, C. Hager, H. D. Pfister, G. Liga, and A. Alvarado, "Model-based machine learning for joint digital backpropagation and PMD compensation," *J. Lightwave Technol.*, 2020.

[J14] N. Rengaswamy*, R. Calderbank, S. Kadhe, and H. D. Pfister, "Logical Clifford synthesis for stabilizer codes," *IEEE Transactions on Quantum Engineering*, vol. 1, pp. 1–17, 2020.

[J15] T. Can, N. Rengaswamy*, R. Calderbank, and H. D. Pfister, "Kerdock codes determine unitary 2-designs," *IEEE Trans. Inform. Theory*, vol. 66, no. 10, pp. 6104–6120, 2020.

[J16] N. Rengaswamy*, R. Calderbank, M. Newman, and H. D. Pfister, "On optimality of CSS codes for transversal T," *IEEE J. Sel. Areas in Inf. Theory*, vol. 1, no. 2, pp. 499–514, 2020.

[J17] V. Oliari, S. Goossens, C. Häger*, G. Liga, R. M. Bütler, M. van den Hout, S. van der Heide, H. D. Pfister, C. M. Okonkwo, and A. Alvarado, "Revisiting efficient multi-step nonlinearity compensation with machine learning: An experimental demonstration," *J. Lightwave Technol.*, 2020.

[J18] N. Rengaswamy*, R. Calderbank, and H. D. Pfister, "Unifying the Clifford hierarchy via symmetric matrices over rings," *Phys. Rev. A*, vol. 100, no. 2, p. 022304, 2019.

[J19] C. Schmidt, H. D. Pfister, and L. Zdeborová, "Minimal sets to destroy the k-core in random networks," *Phys. Rev. E*, vol. 99, no. 2, p. 022310, 2019.

[J20] H. D. Pfister and R. Urbanke, "Near-optimal finite-length scaling for polar codes over large alphabets," *IEEE Trans. Inform. Theory*, vol. 65, pp. 5643–5655, Sept. 2019.

[J21] G. Reeves and H. D. Pfister, "The replica-symmetric prediction for random linear estimation with Gaussian matrices is exact," *IEEE Trans. Inform. Theory*, vol. 65, no. 4, pp. 2252–2283, 2019.

[J22] I. Yoo, M. F. Imani, T. Sleasman, H. D. Pfister, and D. R. Smith, "Enhancing capacity of spatial multiplexing systems using reconfigurable cavity-backed metasurface antennas in clustered MIMO channels," *IEEE Trans. Commun.*, 2018.

[J23] C. Häger* and H. D. Pfister, "Approaching miscorrection-free performance of product and generalized product codes," *IEEE Trans. Commun.*, vol. 66, July 2018.

[J24] P. Charbonneau, Y. C. Li, H. D. Pfister, and S. Yaida, "Cycle-expansion method for the lyapunov exponent, susceptibility, and higher moments," *Physical Review E*, vol. 96, no. 3, p. 032129, 2017.

[J25] Y. Y. Jian, H. D. Pfister, and K. R. Narayanan, "Approaching capacity at high rates with iterative hard-decision decoding," *IEEE Trans. Inform. Theory*, vol. 63, pp. 5752–5773, Sept. 2017.

[J26] C. Häger*, H. D. Pfister, A. Graell i Amat, and F. Brännström, "Density evolution for deterministic generalized product codes on the binary erasure channel at high rates," *IEEE Trans. Inform. Theory*, 2017.

[J27] S. Kudekar, S. Kumar*, M. Mondelli, H. D. Pfister, E. Şaşoğlu, and R. Urbanke, "Reed-Muller codes achieve capacity on erasure channels," *IEEE Trans. Inform. Theory*, vol. 63, no. 7, pp. 4298–4316, 2017. **IEEE ITSOC 2021 Paper Award**.

[J28] O. Sabag, H. H. Permuter, and H. D. Pfister, "A single-letter upper bound on the feedback capacity of unifilar finite-state channels," *IEEE Trans. Inform. Theory*, vol. 63, no. 3, pp. 1392–1409, 2017.

[J29] F. Hamidi-Sepehr*, J.-F. Chamberland, and H. D. Pfister, "On the performance of block codes over finite-state channels in the rare-transition regime," *IEEE Trans. Commun.*, vol. 63, pp. 3974–3990, Nov. 2015.

[J30] F. Hamidi-Sepehr*, H. D. Pfister, and J.-F. Chamberland, "Delay-sensitive communication over fading channels: Queueing behavior and code parameter selection," *IEEE Trans. Vehicular Technology*, vol. 64, pp. 3957–3970, Sept. 2015.

[J31] S. Kumar*, A. J. Young*, N. Macris, and H. D. Pfister, "Threshold saturation for spatially-coupled LDPC and LDGM codes on BMS channels," *IEEE Trans. Inform. Theory*, vol. 60, pp. 7389–7415, Dec. 2014.

[J32] A. Yedla*, Y.-Y. Jian*, P. S. Nguyen*, and H. D. Pfister, "A simple proof of Maxwell saturation for coupled scalar recursions," *IEEE Trans. Inform. Theory*, vol. 60, pp. 6943–6965, Nov. 2014.

[J33] Y.-Y. Jian* and H. D. Pfister, "Convergence of weighted min-sum decoding via dynamic programming on trees," *IEEE Trans. Inform. Theory*, vol. 60, pp. 943–963, Feb. 2014.

[J34] S. Kumar*, J.-F. Chamberland, and H. D. Pfister, "First-passage time and large-deviation analysis for erasure channels with memory," *IEEE Trans. Inform. Theory*, vol. 59, pp. 5547–5565, Sept. 2013.

[J35] A. Yedla*, H. D. Pfister, and K. R. Narayanan, "Code design for the noisy Slepian-Wolf problem," *IEEE Trans. Commun.*, vol. 61, pp. 2535–2545, June 2013.

[J36] P. Parag, J.-F. Chamberland, H. D. Pfister, and K. R. Narayanan, "Code-rate selection, queueing behavior, and the correlated erasure channel," *IEEE Trans. Inform. Theory*, vol. 59, pp. 397–407, Jan. 2013.

[J37] F. Zhang* and H. D. Pfister, "Verification decoding of high-rate LDPC codes with applications in compressed sensing," *IEEE Trans. Inform. Theory*, vol. 58, pp. 5042–5048, Aug. 2012.

[J38] B.-H. Kim* and H. D. Pfister, "Joint decoding of LDPC codes and finite-state channels via linear-programming," *IEEE J. Select. Topics in Signal Processing*, vol. 5, pp. 1563–1576, Dec. 2011.

[J39] F. Zhang* and H. D. Pfister, "Analysis of verification-based decoding on the q-ary symmetric channel for large q," *IEEE Trans. Inform. Theory*, vol. 57, pp. 6754–6770, Oct. 2011.

[J40] P. S. Nguyen*, H. D. Pfister, and K. R. Narayanan, "On multiple decoding attempts for Reed-Solomon codes: A rate-distortion approach," *IEEE Trans. Inform. Theory*, vol. 57, pp. 668–691, Feb. 2011.

[J41] H. D. Pfister, "The capacity of finite-state channels in the high-noise regime," in *Entropy of Hidden Markov Processes and Connections to Dynamical Systems: Papers from the Banff International Research Station Workshop* (B. Marcus, K. Petersen, and T. Weissman, eds.), London Mathematical Society Lecture Note Series, Cambridge University Press, 2011.

[J42] M. P. Wilson, K. Narayanan, H. D. Pfister, and A. Sprintson, "Joint physical layer coding and network coding for bi-directional relaying," *IEEE Trans. Inform. Theory*, vol. 56, pp. 5641–5654, Nov. 2010.

[J43] H. D. Pfister and P. H. Siegel, "Joint iterative decoding of LDPC codes for channels with memory and erasure noise," *IEEE J. Select. Areas Commun.*, vol. 26, pp. 320–337, Feb. 2008.

[J44] H. D. Pfister and I. Sason, "Accumulate–repeat–accumulate codes: Capacity-achieving ensembles of systematic codes for the erasure channel with bounded complexity," *IEEE Trans. Inform. Theory*, vol. 53, pp. 2088–2115, June 2007.

[J45] J. B. Soriaga, H. D. Pfister, and P. H. Siegel, "Determining and approaching achievable rates of binary intersymbol interference channels using multistage decoding," *IEEE Trans. Inform. Theory*, vol. 53, pp. 1416–1429, April 2007. **IEEE COMSOC 2007 Best Paper in Data Storage**.

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