

Published and Accepted Journal Papers

- [1] P.-H. Lin, F. Gabry, R. Thobaben, E.A. Jorswieck, and M. Skoglund “Multi-Phase Smart Relaying and Cooperative Jamming in Secure Cognitive Radio Networks,” *IEEE Transactions on Cognitive Communications and Networks*, vol. 2, no. 1, pp. 38-52 March 2016.
- [2] F. Gabry, A. Zappone, R. Thobaben, E. Jorswieck, and M. Skoglund, “Energy Efficiency Analysis of Cooperative Jamming in Cognitive Radio Networks with Secrecy Constraints,” in *IEEE Wireless Communications Letters*, vol. 4, no. 4, pp. 437-440, April 2015, DOI: 10.1109/LWC.2015.2432802.
- [3] Z. Si, J. Ma, and R. Thobaben, “Coded Cooperation for Multiway Relaying in Wireless Sensor Networks,” in *Sensors*, vol. 15, no. 7, pp. 15265-15284, May 2015, DOI:10.3390/s150715265.
- [4] L. Grosjean, L. K. Rasmussen, R. Thobaben, and M. Skoglund, “Systematic LDPC Convolutional Codes: Asymptotic and Finite-Length Anytime Properties,” in *IEEE Transactions on Communications*, vol. 62, no. 12, 2014.
- [5] R. Blasco-Serrano, D. Zachariah, D. Sundman, R. Thobaben, and M. Skoglund, “A measurement rate-MSE tradeoff in compressive sensing through partial support recovery,” in *IEEE Transactions on Signal Processing*, vol. 62, no. 8, Aug. 2014.
- [6] R. Blasco-Serrano, J. Lv, R. Thobaben, E. A. Jorswieck, and M. Skoglund, “Multi-antenna transmission for underlay and overlay cognitive radio with explicit message learning phase,” *EURASIP Journal on Wireless Communications and Networking (JWCN)*, 2013:195.
- [7] Z. Si, R. Thobaben, and M. Skoglund, “Bilayer LDPC convolutional codes for decode-and-forward relaying,” *IEEE Transactions on Communications*, vol. 61, no. 8, Aug. 2013.
- [8] V. Rathi, M. Andersson, R. Thobaben, J. Kliewer, and M. Skoglund, “Performance analysis and design of two edge type LDPC codes for the BEC wiretap channel,” *IEEE Transactions on Information Theory*, vol. 59, no. 2, Feb. 2013.
- [9] R. Blasco-Serrano, R. Thobaben, M. Andersson, V. Rathi, and M. Skoglund, “Polar codes for cooperative relaying,” *IEEE Transactions on Communications*, vol. 60, no. 11, pp. 3263–3273, Nov. 2012.
- [10] Z. Si, R. Thobaben, and M. Skoglund, “Rate-compatible LDPC convolutional codes achieving the capacity of the BEC,” *IEEE Transactions on Information Theory*, vol. 58, no. 6, pp. 4021–4029, June 2012.
- [11] M. Andersson, V. Rathi, R. Thobaben, J. Kliewer, and M. Skoglund, “Nested polar codes for wiretap and relay channels,” *IEEE Communications Letters*, vol. 14, no. 8, pp. 752–754, August 2010.
- [12] R. Thobaben and J. Kliewer, “An efficient variable-length code construction for iterative source-channel decoding,” *IEEE Transactions on Communications*, vol. 57, no. 7, pp. 2005–2013, July 2009.
- [13] R. Thobaben and J. Kliewer, “Low complexity iterative joint source-channel decoding for variable-length encoded Markov sources,” *IEEE Transactions on Communications*, vol. 53, no. 12, pp. 2054–2064, December 2005.

- [14] J. Kliewer and R. Thobaben, "Iterative joint source-channel decoding of variable-length codes using residual source redundancy," *IEEE Transactions on Wireless Communications*, vol. 4, no. 3, pp. 919–929, May 2005.
- [15] J. Kliewer and R. Thobaben, "Parallel concatenated joint source-channel coding," *IEE Electronics Letters*, vol. 39, no. 23, pp. 1664–1666, November 2003.
- [16] R. Thobaben and J. Kliewer, "Robust decoding of variable-length encoded Markov sources using a three-dimensional trellis," *IEEE Communications Letters*, vol. 7, no. 7, pp. 320–322, July 2003.

Book Chapters

- [17] A. Graell i Amat and R. Thobaben, "An introduction to distributed channel coding," in *Channel Coding: Theory, Algorithms, and Applications*, Chapter 9, E. Biglieri, D. Declercq, and M. Fossorier, ed. Academic Press Library in Mobile and Wireless Communications, 2014. (DOI: 10.1016/B978-0-12-396499-1.00009-1)
- [18] G. Caso, L. De Nardis, R. Thobaben, and M.-G. Di Benedetto, "Cooperative Sensing of Spectrum Opportunities," in *Opportunistic Spectrum Sharing and White Space Access: The Practical Reality*, First Edition, Chapter 7, O. Holland, H. Bogucka, and A. Medeisis, ed. John Wiley & Sons, Inc., 2015.

Papers in Peer-Reviewed Conference Proceedings

- [19] L. Grosjean, R. Thobaben, L.K. Rasmussen, and M. Skoglund, "Variable-Rate Anytime Transmission with Feedback," in *Proc. 2016 IEEE 84th Vehicular Technology Conference: VTC2016-Fall*, invited paper, Montréal, Canada, Sept. 2016.
- [20] H. Forssell, R. Thobaben, J. Gross, and M. Skoglund, "Feature-Based Multi-User Authentication for Parallel Uplink Transmissions," in *Proc. 2016 9th International Symposium on Turbo Codes and Iterative Information Processing*, invited paper, Brest, France, Sept. 2016.
- [21] H. Sandberg, G. Dan, R. Thobaben: "Differentially Private State Estimation in Distribution Networks with Smart Meters," in *Proc. IEEE Conference on Decision and Control*, Osaka, Japan, Dec. 2015.
- [22] F. Gabry, R. Thobaben and M. Skoglund "Secrecy Games in Cognitive Radio Networks with Multiple Secondary Users", in *Proc. IEEE Conference on Communications and Network Security (CNS 2015), Workshop on Physical Layer Methods for Wireless Security*, Florence, Italy, September 2015.
- [23] P.-H. Lin, F. Gabry, R. Thobaben, E. Jorswieck, and M. Skoglund, "Interference Neutralization vs Clean Relaying in Cognitive Radio Networks with Secrecy," in *Proc. WiComSec-Phy 2015 (with MobiQuitous'15)*, Coimbra, Portugal, July 2015.
- [24] P.-H. Lin, F. Gabry, R. Thobaben, E. Jorswieck, and M. Skoglund, "Multi-phase Transmission for Secure Cognitive Radio Networks", in *Proc. IEEE International Conference on Communications (ICC 2015), Workshop on Physical Layer Security (WPLS)*, London, U.K., June 2015.
- [25] R. Thobaben, G. Dan, H. Sandberg, "Wiretap Codes for Secure Multi-Party Computation," in *Proc. IEEE Globecom 2014*, Dec. 2014, Austin, Tx, USA.

- [26] Pin-Hsun Lin, F. Gabry, R. Thobaben, E. Jorswieck, M. Skoglund, "Clean relaying in cognitive radio networks with variational distance secrecy constraint," in *Proc. Globecom 2014*, Dec. 2014, Austin, Tx, USA.
- [27] R. Blasco Serrano, R. Thobaben, and M. Skoglund, "Communication and Interference Coordination", in *Information Theory and Applications Workshop (ITA) 2014*, San Diego, CA, USA, Feb. 2014.
- [28] F. Naghibi, S. Salimi, R. Thobaben, and M. Skoglund, "The Lossless CEO Problem with Security Constraints," in *Proc. International Symposium on Wireless Communication Systems 2013 (ISWCS 2013)*, Ilmenau, Germany, Aug. 2013.
- [29] R. Blasco-Serrano, D. Zachariah, D. Sundman, R. Thobaben, and M. Skoglund, "An achievable measurement rate-MSE tradeoff in compressive sensing through partial support recovery," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 2013.
- [30] F. Gabry, S. Salimi, R. Thobaben, and M. Skoglund, "High SNR Performance of Amplify-and-Forward Relaying in Rayleigh Fading Wiretap Channels," in *Proc. 2013 Iran Workshop on Communication and Information Theory (IWCIT 2013)*, Tehran, Iran, May 2013.
- [31] F. Naghibi, R. Thobaben, S. Salimi, and M. Skoglund, "Layered LDPC convolutional codes for compression of correlated sources under adversarial attacks," in *Proc. International Symposium on Information Theory and its Applications (ISITA 2012)*, Honolulu, Hawaii, USA, Oct. 2012.
- [32] Z. Si, R. Thobaben, M. Skoglund, and T.J. Oechtering, "Bidirectional broadcasting by using multi-edge type LDPC convolutional codes," in *Proc. International Symposium on Turbo Codes & Iterative Information Processing*, Gothenburg, Sweden, Aug. 2012.
- [33] J. Lv, R. Blasco-Serrano, E. A. Jorswieck, and R. Thobaben, "Linear precoding in MISO cognitive channels with causal primary message," in *Proc. International Symposium on Wireless Communication Systems 2012 (ISWCS 2012)*, Paris, France, Aug. 2012.
- [34] L. De Nardis, M.-G. Di Benedetto, D. Tassetto, S. Bovelli, A. Akhtar, O. Holland, and R. Thobaben, "Impact of mobility in cooperative spectrum sensing: theory vs. simulation," in *Proc. International Symposium on Wireless Communication Systems 2012 (ISWCS 2012)*, Paris, France, Aug. 2012.
- [35] F. Gabry, N. Li, N. Schrammar, M. Girnyk, E. Karipidis, R. Thobaben, L. K. Rasmussen, E. G. Larsson, and M. Skoglund, "Secure broadcasting in cooperative cognitive radio networks," in *Proc. Future Network & Mobile Summit 2012*, Berlin, Germany, July 2012.
- [36] R. Blasco-Serrano, J. Lv, R. Thobaben, E. A. Jorswieck, A. Kliks, and M. Skoglund, "Comparison of underlay and overlay spectrum sharing strategies in MISO cognitive channels," in *Proc. International Conference on Cognitive Radio Oriented Wireless Networks (CROWN-COM 2012)*, Stockholm, Sweden, June 2012.
- [37] L. Dössel, L. K. Rasmussen, R. Thobaben, and M. Skoglund, "Anytime reliability of systematic LDPC convolutional codes" in *Proc. IEEE International Conference on Communications (ICC 2012)*, Ottawa, Canada, June 2012.
- [38] F. Gabry, N. Schrammar, M. A. Girnyk, N. Li, R. Thobaben, and L. K. Rasmussen, "Cooperation for secure broadcasting in cognitive radio networks," in *Proc. IEEE International Conference on Communications (ICC 2012)*, Ottawa, Canada, June 2012.

- [39] Z. Si, R. Thobaben, and M. Skoglund, "Dynamic decode-and-forward relaying with rate-compatible LDPC convolutional codes," in *Proc. International Symposium on Communications, Control and Signal Processing (ISCCSP 2012)*, invited paper, Rome, Italy, May 2012.
- [40] J. Lv, R. Blasco-Serrano, E. A. Jorswieck, R. Thobaben, and A. Kliks, "Optimal beamforming in MISO cognitive channels with degraded message sets," in *Proc. IEEE Wireless Communications and Networking Conference (WCNC 2012)*, Paris, France, April 2012.
- [41] J. Lv, E. A. Jorswieck, R. Blasco-Serrano, R. Thobaben, and A. Kliks, "Linear precoding in MISO cognitive channels with degraded message sets," in *Proc. International ITG Workshop on Smart Antennas 2012*, Dresden, Germany, March 2012.
- [42] A. Kliks, P. Sroka, J. Lv, R. Thobaben, E. A. Jorswieck, and R. Blasco-Serrano, "Crystallized rate regions in the secondary interference channels," in *Proc. International ITG Workshop on Smart Antennas 2012*, Dresden, Germany, March 2012.
- [43] R. Blasco-Serrano, R. Thobaben, and M. Skoglund, "Polar codes for coordination in cascade networks," in *Proc. International Zurich Seminar on Communications (IZS 2012)*, Zürich, Switzerland, March 2012.
- [44] F. Gabry, R. Thobaben, and M. Skoglund, "Cooperation for secrecy in presence of an active eavesdropper: a game-theoretic analysis," in *Proc. IEEE International Symposium on Wireless Communication Systems (ISWCS 2011)*, Aachen, Germany, Nov. 2011.
- [45] Z. Si, M. Andersson, R. Thobaben, and M. Skoglund, "Rate-compatible LDPC convolutional codes for capacity-approaching hybrid ARQ," *Proc. IEEE Information Theory Workshop (ITW 2011)*, Paraty, Brazil, Oct. 2011.
- [46] Z. Si, R. Thobaben, and M. Skoglund, "Bilayer LDPC convolutional codes for half-duplex relay channels," in *Proc. IEEE International Symposium on Information Theory (ISIT 2011)*, St. Petersburg, Russia, August 2011.
- [47] F. Gabry, R. Thobaben, and M. Skoglund, "Outage performance and power allocation for decode-and-forward relaying and cooperative jamming for the wiretap channel," in *Proc. IEEE International Conference on Communications (ICC 2011)*, Kyoto, Japan, June 2011.
- [48] F. Gabry, R. Thobaben, and M. Skoglund, "Outage performances for amplify-and-forward, decode-and-forward and cooperative jamming strategies for the wiretap channel," in *Proc. IEEE Wireless Communications and Networking Conference (WCNC 2011)*, Cancun, Mexico, March 2011.
- [49] R. Blasco-Serrano, R. Thobaben, and M. Skoglund, "Bandwidth efficient compress-and-forward relaying based on joint source-channel coding," in *Proc. IEEE Wireless Communications and Networking Conference (WCNC 2011)*, Cancun, Mexico, March 2011.
- [50] M. Andersson, V. Rathi, R. Thobaben, J. Kliewer, and M. Skoglund, "Equivocation of Eve using two edge type LDPC codes for the erasure wiretap channel," in *Proc. Asilomar Conference on Signals, Systems & Computers*, Pacific Grove, CA, USA, November 2010.
- [51] R. Blasco-Serrano, R. Thobaben, V. Rathi, and M. Skoglund, "Polar codes for compress-and-forward in binary relay channels," in *Proc. Asilomar Conference on Signals, Systems & Computers*, Pacific Grove, CA, USA, November 2010.

- [52] Z. Si, R. Thobaben, and M. Skoglund, "Instantaneous relaying with bit-interleaved coded modulation: Design and optimization," in *Proc. International Symposium on Turbo Codes & Iterative Information Processing*, Brest, France, Sept. 2010.
- [53] R. Thobaben, "Non-binary joint network/channel coding for multi-user ARQ," in *Proc. International ICST Conference on Communications and Networking in China (ChinaCom 2010)*, invited paper, Beijing, China, August 2010.
- [54] K. Kittichokechai, T. J. Oechtering, M. Skoglund, and R. Thobaben, "Source and channel coding with action-dependent partially known two-sided state information," in *Proc. IEEE International Symposium on Information Theory (ISIT 2010)*, Austin, TX, USA, June 2010.
- [55] P. Fouillot, C. J. Le Martret, and R. Thobaben, "Adaptive relaying strategies for collaborative spectrum sensing," in *Proc. International ICST Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM 2010)*, invited paper, Cannes, France, June 2010.
- [56] R. Blasco-Serrano, R. Thobaben, and M. Skoglund, "Compress-and-forward relaying based on symbol-wise joint source-channel coding," in *Proc. IEEE International Conference on Communications (ICC 2010)*, Cape Town, South Africa, May 2010.
- [57] E. G. Larsson, R. Thobaben, and G. Wang, "On diversity combining with unknown channel state information and unknown noise variance," in *Proc. IEEE Wireless Communications and Networking Conference (WCNC 2010)*, Sydney, Australia, April 2010.
- [58] Z. Si, R. Thobaben, and M. Skoglund, "A practical approach to adaptive coding for the three-node relay channel," in *Proc. IEEE Wireless Communications and Networking Conference (WCNC 2010)*, Sydney, Australia, April 2010.
- [59] Z. Si, R. Thobaben, and M. Skoglund, "Adaptive channel coding for the three-node relay channel with limited channel-state information," in *Proc. International Symposium on Communications, Control and Signal Processing (ISCCSP 2010)*, invited paper, Limassol, Cyprus, March 2010.
- [60] K. Kansanen, A. N. Kim, R. Thobaben, and J. Karlsson, "Low complexity bandwidth compression mappings for sensor networks," in *Proc. International Symposium on Communications, Control and Signal Processing (ISCCSP 2010)*, invited paper, Limassol, Cyprus, March 2010.
- [61] V. Rathi, M. Andersson, R. Thobaben, J. Kliewer, and M. Skoglund, "Two edge type LDPC codes for the wiretap channel," in *Proc. Asilomar Conference on Signals, Systems & Computers*, Pacific Grove, CA, USA, Nov. 2009.
- [62] R. Thobaben, "Joint network/channel coding for bandwidth-efficient multi-user ARQ," in *Proc. IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC 2009)*, Perugia, Italy, June 2009.
- [63] Z. Si, R. Thobaben, and M. Skoglund, "On distributed serially concatenated codes," in *Proc. IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC 2009)*, Perugia, Italy, June 2009.
- [64] R. Thobaben, "On distributed codes with noisy relays," in *Proc. Asilomar Conference on Signals, Systems & Computers*, Pacific Grove, CA, USA, Oct. 2008.
- [65] R. Thobaben, "A tutorial introduction to iterative source-channel decoding," in *Proc. ITG Conference on Voice Communication*, invited paper, Aachen, Germany, Oct. 2008.

- [66] R. Thobaben, L. Schmalen, and P. Vary, "Joint source-channel coding with inner irregular codes," in *Proc. IEEE International Symposium on Information Theory (ISIT 2008)*, Toronto, Ontario, Canada, July 2008.
- [67] B. Mercier, V. Fodor, R. Thobaben, M. Skoglund, V. Koivunen, S. Lindfors, J. Ryynnen, E. G. Larsson, C. Petrioli, G. Bongiovanni, O. Grøndalen, K. Kansanen, G. E. Øien, T. Ekman, A. M. Hayar, R. Knopp, B. Beferull Lozano, "Sensor networks for cognitive radio: Theory and system design," in *Proc. ICT Mobil Summit*, June 2008, Stockholm, Sweden.
- [68] R. Thobaben, "Joint network/channel coding for multi-user hybrid-ARQ," in *Proc. International ITG Conference on Source and Channel Coding (SCC 2008)*, Ulm, Germany, Jan. 2008.
- [69] R. Thobaben and E. G. Larsson, "Sensor-network-aided cognitive radio: on the optimal receiver for estimate-and-forward protocols applied to the relay channel," in *Proc. Asilomar Conference on Signals, Systems & Computers*, invited paper, Pacific Grove, CA, USA, Nov. 2007.
- [70] R. Thobaben, "EXIT functions for randomly punctured systematic codes," in *Proc. IEEE Information Theory Workshop (ITW 2007)*, Lake Tahoe, CA, USA, Sept. 2007.
- [71] R. Thobaben, "A new transmitter concept for iteratively-decoded source-channel coding schemes," in *Proc. IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC 2007)*, Helsinki, Finland, 2007.
- [72] R. Thobaben and J. Kliewer, "Design considerations for iteratively-decoded source-channel coding schemes," in *Proc. Allerton Conference on Communications, Control, and Computing*, invited paper, Monticello, IL, USA, Sept. 2006.
- [73] J. Mietzner, R. Thobaben, and P. A. Hoeher, "Analysis of the expected error performance of cooperative wireless networks employing distributed space-time codes," in *Proc. IEEE Global Telecommunications Conference (Globecom 2004)*, Dallas, Texas, USA, Nov./Dec. 2004.
- [74] R. Thobaben and J. Kliewer, "Robust transmission of variable-length encoded Markov sources using rate-1 channel coding and efficient iterative source-channel decoding," in *Proc. European Signal Processing Conf. (EUSIPCO 2004)*, pp. 881–884, Vienna, Austria, Sept. 2004.
- [75] R. Thobaben and I. Land, "Blind quality estimation for corrupted source signals based on a-posteriori probabilities," in *Proc. IEEE International Symposium on Information Theory (ISIT 2004)*, p. 304, Chicago, USA, June 2004.
- [76] J. Kliewer and R. Thobaben, "A-posteriori probability decoding of variable-length codes using a three-dimensional trellis representation," in *Proc. IEEE Global Telecommunications Conference (GLOBECOM 2003)*, pp. 2213–2217, San Francisco, CA, USA, Dec. 2003.
- [77] R. Thobaben and J. Kliewer, "On iterative source-channel decoding for variable-length encoded Markov sources using a bit-level trellis," in *Proc. IEEE Signal Processing Workshop on Signal Processing Advances in Wireless Communications (SPAWC 2003)*, Rome, Italy, June 2003.
- [78] J. Kliewer and R. Thobaben, "On the utilization of residual source redundancy for iterative joint source-channel decoding of variable-length codes," in *Proc. IEEE International Symposium on Information Theory (ISIT 2002)*, p. 199, Lausanne, Switzerland, July 2002.

-
- [79] J. Kliewer and R. Thobaben, "Combining FEC and optimal soft-input source decoding for the reliable transmission of correlated variable-length encoded signals," in *Proc. IEEE Data Compression Conference 2002 (DCC 2002)*, pp. 83-91, Snowbird, UT, USA, April 2002.

Ph.D. Thesis

- [80] R. Thobaben, "Iterative Quellen- und Kanaldecodierung für Codes variabler Länge (Iterative source-channel decoding for variable-length codes)," in *Arbeiten über Digitale Signalverarbeitung*, Nr. 29, U. Heute, ed. Shaker Verlag, 2007.