

PUBLICATIONS

Journal Papers

- [J1] Dai, Jianxin and Chen, Ming and Chung, Pei-Jung: *The Downlink Capacity of Single-User SA-MIMO System*, Wireless Personal Communications, Springer Netherlands, 2012.
- [J2] Pei-Jung Chung and Johann F. Böhme: *Maximum Likelihood Approach for Estimation, Detection and Exploration of Seismic Events*, IEEE Signal Processing Magazine, vol. 29, no. 3, pp. 40-46, May 2012.
- [J3] Huiqin Du, Pei-Jung Chung: *A Probabilistic Approach for Robust Leakage-based MU-MIMO Downlink Beamforming with Imperfect Channel State Information*, IEEE Transactions on Wireless Communications, vol.11, no.3, pp. 1239-1247, March 2012.
- [J4] Shuang Wan, Pei-Jung Chung, Bernie Mulgrew: *Maximum likelihood array calibration using particle swarm optimization*, accepted by IET Signal Processing Journal. (*invited paper*)
- [J5] Shou Song, John Thompson, Pei-Jung Chung, Peter Grant: *Exploiting Negative Feedback Information for One-Bit Feedback Beamforming Algorithm*, IEEE Transactions on Wireless Communications, vol.11, no.2, pp.516-525, February 2012.
- [J6] Pei-Jung Chung, Huiqin Du, Jacek Gondzio: *A Probabilistic Constraint Approach for Robust Transmit Beamforming with Imperfect Channel Information*, IEEE Transactions on Signal Processing, Vol 59, No 6, June 2011, pp. 2773 - 2782.
- [J7] Shou Song, John Thompson, Pei-Jung Chung, Peter Grant: *BER Analysis for Distributed Beamforming with Phase Errors*, IEEE Transactions on Vehicular Technology, Vol 59, No 8 , October 2010, pp. 4169 - 4174.
- [J8] Pei-Jung Chung: *A Max-Search Approach for DOA Estimation With Unknown Number of Signals*, IEEE Journal of Selected Topics in Signal Processing, Vol 4, No 3, June 2010, pp. 612 - 619.
- [J9] Pei-Jung Chung, Mats Viberg, Christoph F. Mecklenbräuker: *Broadband ML Estimation Under Model Order Uncertainty*, Signal Processing, Vol 90(5), May 2010, pp. 1350-1356.
- [J10] Pei-Jung Chung: *Stochastic Maximum Likelihood Estimation under Misspecified Numbers of Signals*, IEEE Transactions on Signal Processing, Vol 55(9), September 2007, pp. 4726 - 4731.
- [J11] Pei-Jung Chung, Johann F. Böhme, Christoph F. Mecklenbräuker, Alfred O. Hero: *Detection of the Number of Signals Using the Benjamini-Hochberg Procedure*, IEEE Transactions on Signal Processing, Vol 55(6), June 2007, pp. 2497 - 2508.
- [J12] Pei-Jung Chung, Johann F. Böhme: *Recursive EM and SAGE-inspired Algorithms with Application to DOA Estimation*, IEEE Transactions on Signal Processing, Vol 53 (8), August 2005, pp. 2664 - 2677.

- [J13] Pei-Jung Chung, William J.J. Roberts, Johann F. Böhme: *Recursive K-Distribution Parameter Estimation*, IEEE Transactions on Signal Processing, Vol 53(2), February 2005, pp. 397 - 402.
- [J14] Pei-Jung Chung, Johann F. Böhme, Alfred O. Hero: *Tracking of Multiple Moving Sources Using Recursive EM Algorithm*, EURASIP Journal on Applied Signal Processing, January 2005, pp. 50 - 60.
- [J15] Pei-Jung Chung, Johann F. Böhme: *DOA Estimation Using Fast EM and SAGE Algorithms*, Signal Processing, Vol 82(11), November 2002, pp. 1753 - 1762.
- [J16] Pei-Jung Chung, Johann F. Böhme: *Comparative Convergence Analysis of EM and SAGE Algorithms in DOA Estimation*, IEEE Transactions on Signal Processing, Vol 49(12), December 2001, pp. 2940-2949.
- [J17] Pei-Jung Chung, Michael L. Jost, Johann F. Böhme: *Seismic Wave Parameter Estimation and Signal Detection Using Broadband Maximum Likelihood Methods*, Computers and Geosciences, Vol 27(2), March 2001, pp. 147-156.
- [J18] Christoph F. Mecklenbräuker, Peter Gerstoft, Johann F. Böhme, Pei-Jung Chung: *Hypothesis Testing for Geoacoustic Environmental Models*, The Journal of the Acoustical Society of America, Vol 105(3), March 1999, pp. 1738-1748.

Book Chapter

- [B1] Pei-Jung Chung, Johann F. Böhme: Detecting the Number of Signals Using the False Discovery Rate, *Festschrift zum 80. Geburtstag von Prof. Dr. Dietrich Wolf*, Studientexte zur Sprachkommunikation, 2009. ISBN 978-3-941298-30-9
- [B2] Pei-Jung Chung, Johann F. Böhme: EM and SAGE Algorithms for Towed Array Data, *The Applications of Space-Time Adaptive Processing*, IEE Publishers, 2004, Editor: R. Klemm. ISBN 0-85296-924-4

Peer Reviewed Conference Papers

- [C1] Pei-Jung Chung, Huiqin Du: *Robust SLNR Downlink Beamforming Based on Markov's Inequality* to be presented at ICC, Ottawa, Canada, June 2012.
- [C2] Pei-Jung Chung, Kon Max Wong : *A Full Generalized Likelihood Ratio Test for Source Detection*, ICASSP, Kyoto, Japan, March 2012.
- [C3] Jian-xin Dai. Ming Chen, Pei-Jung Chung *The Uplink Capacity of SA-MIMO System under Single-User Scenario*, the International Conference on Wireless Communications & Signal Processing, Nov 2011, Nanjing, China.
- [C4] Shuang Wan, Pei-Jung Chung, Bernie Mulgrew: *Near-field array shape calibration*, ICASSP, May 22 - 27, 2011, Prague.
- [C5] Pablo Gonzalez-Brevis, Jacek Gondzio, Yijia Fan, Vincent Poor, John Thompson, Ioannis Krikidis, Pei-Jung Chung: *Base Station Location Optimization for Minimal Energy Consumption in Wireless Networks*, VTC-spring 2011, Budapest.

- [C6] Shuang Wan, Pei-Jung Chung, Bernie Mulgrew: *Array shape self-calibration using particle swarm optimization and decaying diagonal loading*, Sensor Signal Processing for Defence Workshop, September 2010, London, UK.
- [C7] Huiqin Du, Pei-Jung Chung: *A probabilistic leakage-based beamforming assisted Alamouti code for downlink multi stream MU-MIMO system*, Proc. ChinaCom 2010, August 25-27, Beijing, China.
- [C8] Shou Song, John Thompson, Pei-Jung Chung, Peter Grant: *Improving the One-bit Feedback Algorithm for Distributed Beamforming*, Proc. WCNC, April 18-21, 2010, Sydney Australia.
- [C9] Pei-Jung Chung, Huiqin Du, Jacek Gondzio: *A Probabilistic Constraint Approach for Robust Transmit Beamforming with Imperfect Channel Information*, Proc. EUSIPCO, August 24 -28, 2009, Glasgow, UK.
- [C10] Huiqin Du, Pei-Jung Chung, Bernie Mulgrew: *Robust Adaptive Modulation with Imperfect Channel Information*, Proc. EUSIPCO, August 24 - 28, 2009, Glasgow, UK.
- [C11] Huiqin Du, Pei-Jung Chung: *Robust Leakage-Based Transmit Beamforming with Probabilistic Constraint for Downlink Multi-User MIMO System*, Proc. IEEE Workshop on Statistical Signal Processing, August 31 -September 3, 2009, Cardiff, UK.
- [C12] Pei-Jung Chung, Mats Viberg, Christoph F. Mecklenbräuker: *Broadband ML Estimation Under Model Order Uncertainty*, Proc. IEEE ICASSP 2009, April 19-24, Taipei, Taiwan.
- [C13] Shuo Song, John Thompson, Pei-Jung Chung, Peter Grant: *Probability of Error for PSK Modulation in Distributed Beamforming with Phase Errors*, Proc. International ITG Workshop on Smart Antennas, February 16-18, 2009, Berlin, Germany.
- [C14] Pei-Jung Chung, Christoph F. Mecklenbräuker: *Deterministic ML Estimation for Unknown Numbers of Signals*, Proc. EUSIPCO 2008, August 25-29, Lausanne, Switzerland.
- [C15] Huiqin Du, Pei-Jung Chung, Jacek Gondzio, Bernard Mulgrew: *Robust Transmit Beamforming Based on Probabilistic Constraint*, Proc. EUSIPCO 2008, August 25-29, Lausanne, Switzerland.
- [C16] Pei-Jung Chung and Shuang Wan: *Array Self-Calibration Using SAGE Algorithm*, Proc. IEEE SAM Workshop, 2008, Darmstadt, Germany.
- [C17] Pei-Jung Chung: *ML estimation for Unknown Numbers of Signals: Performance Study*, Proc. IEEE SAM Workshop, 2008, Darmstadt, Germany.
- [C18] Pei-Jung Chung, Dirk Maiwald, Nicolai Czink, Christoph F. Mecklenbräuker, Bernard H. Fleury: *Determining the Number of Propagation Paths from Broadband MIMO Measurements via Bootstrapped Likelihood Statistics and the False Discovery Criterion - Part I Methodology*, Proc. IEEE CAMSAP 2007.
- [C19] Nicolai Czink, Pei-Jung Chung, Dirk Maiwald, Bernard H. Fleury, Christoph F. Mecklenbräuker: *Determining the number of Propagation Paths from Broadband MIMO Measurements via Bootstrapped Likelihood Statistics and the False Discovery Criterion - Part II Application*, Proc. IEEE CAMSAP 2007.
- [C20] Pei-Jung Chung: *Robust ML Estimation for Unknown Numbers of Signals*, Proc. EUSIPCO, Poznań, Poland, September 3-7, 2007.

- [C21] Pei-Jung Chung: *More on ML Estimation Under Misspecified Numbers of Signals*, Proc. International Conference on Digital Signal Processing, July 1-4, 2007, Cardiff, UK.
- [C22] Pei-Jung Chung: *Consistency of Detection of the Number of Signals Using Multiple Hypothesis Tests*, Proc. IEEE ICASSP, Honolulu, Hawaii, USA, April 16 - 20, 2007.
- [C23] Pei-Jung Chung: *Performance Analysis of ML Estimation under Misspecified Numbers of Signals*, Proc. IEEE SAM, Boston USA, July 2006.
- [C24] Pei-Jung Chung: *Stochastic ML Estimation under Misspecified Number of Signals*, Proc. EUSIPCO, Florence Italy, September 4-8, 2006.
- [C25] Pei-Jung Chung, Nicolai Czink, Christoph F. Mecklenbräuker: *Model Order Selection for Multipath MIMO Channels Using the Benjamini-Hochberg Procedure*, ITG-/IEEE-Workshop on Smart Antennas, March 13-14, 2006, Ulm Germany.
- [C26] Pei-Jung Chung, Johann F. Böhme, Christoph F. Mecklenbräuker, Alfred O. Hero: *Multiple Signal Detection Using the Benjamini-Hochberg Procedure*, Proc. IEEE Computational Advances in Multi-Sensor Adaptive Processing, 13-15 December, Puerto Vallarta, Mexico 2005.
- [C27] Pei-Jung Chung: *ML Estimation under Misspecified Number of Signals*, Proc. Asilomar Conference on Signals, Systems, and Computers, October 30 - November 2, 2005.
- [C28] Pei-Jung Chung, Johann F. Böhme, Christoph F. Mecklenbräuker, Alfred O. Hero: *On Signal Detection Using the Benjamini-Hochberg Procedure*, Proc. IEEE Workshop on Statistical Signal Processing, Bordeaux, France, July 17-20, 2005.
- [C29] Pei-Jung Chung, Anatole D. Ruslanov, Johann F. Böhme: *Parametric and Nonparametric Approaches to Detection in Magnetic Resonance Force Microscopy*, Proc. EUSIPCO, September 6-10, 2004, Vienna, Austria.
- [C30] Pei-Jung Chung, Johann F. Böhme: *Localization of Multiple Moving Sources Using Recursive EM Algorithm*, Proc. EUSIPCO, September 6-10, 2004, Vienna, Austria.
- [C31] Pei-Jung Chung, Johann F. Böhme, Alfred O. Hero, Christoph F. Mecklenbräuker: *Signal Detection Using A Multiple Hypothesis Test*, Proc. IEEE Sensor Array and Multichannel Signal Processing Workshop, July 18-21, 2004, Sitges, Spain.
- [C32] Pei-Jung Chung, José Moura: *A GLRT and Bootstrap Approach to Detection in Magnetic Resonance Force Microscopy*, Proc. IEEE ICASSP, May 17-21, 2004, Montreal, Canada.
- [C33] Pei-Jung Chung, Johann F. Böhme: *EM and SAGE Algorithms for Source Localization*, Proc. NATO Sensors & Electronics Technology Symposium, April 26-28, 2004, Lercici, Italy.
- [C34] Pei-Jung Chung, Johann F. Böhme: *Recursive EM Algorithm with Adaptive Step Size*, Proc. The Seventh International Symposium on Signal Processing and Its Applications, Paris, France, July 1-4, 2003.
- [C35] Pei-Jung Chung, William J. J. Roberts: *Recursive Estimation of K-Distribution Parameters*, Proc. IEEE ICASSP 2003, Hong Kong, April, 2003.

- [C36] Pei–Jung Chung, Johann F. Böhme: *DOA Estimation of Multiple Moving Sources Using Recursive EM Algorithm* Proc. IEEE Sensor Array and Multichannel Signal Processing Workshop, Washington DC, USA, August 4-6, 2002.
- [C37] Pei–Jung Chung, Johann F. Böhme: *Experimental Study of the EM and SAGE Algorithms with Application to Sonar Data*, Proc. IEEE Sensor Array and Multichannel Signal Processing Workshop, Washington DC, USA, August 4-6, 2002.
- [C38] Pei–Jung Chung, Johann F. Böhme: *Recursive EM Algorithm For Stochastic ML DOA Estimation*, Proc. IEEE ICASSP 2002, Orlando, Florida, USA, May 13-17, 2002.
- [C39] Pei–Jung Chung, Johann F. Böhme: *DOA Estimation Using Fast EM Algorithm*, Proc. Sixth International Symposium on Signal Processing and Its Applications, Kuala Lumpur, Malaysia, August 13-16, 2001.
- [C40] Pei–Jung Chung, Johann F. Böhme: *Recursive EM and SAGE Algorithms*, Proc. IEEE Workshop on Statistical Signal Processing, Singapore, August 6-8, 2001, pp. 540-542.
- [C41] Pei–Jung Chung, Johann F. Böhme: *Comparative Convergence Analysis of EM and SAGE Algorithms in DOA Estimation*, Proc. IEEE ICASSP 2001, Salt Lake City, USA, May 7-11, 2001.
- [C42] Pei–Jung Chung, Alex B. Gershman, Johann F. Böhme: *Comparative Study of Two-Dimensional Maximum Likelihood and Interpolated Root-MUSIC with Application to Teleseismic Source Localization*, Proc. IEEE Workshop on Statistical Signal and Array Processing 2000, Pocono Manor, Pennsylvania, USA, August 14-16, 2000.
- [C43] Pei–Jung Chung, Michael L. Jost, Johann F. Böhme: *Multiple Phase Detection and Parameter Estimation for Processing Seismic Array Data*, Proc. IEEE ICASSP 2000, Istanbul, June 5-9, 2000.
- [C44] Christoph F. Mecklenbräuker, Peter Gerstoft, Pei–Jung Chung, Johann F. Böhme: *Generalized Likelihood Ratio Test for Selecting a Geoacoustic Environmental Model*, Proc. IEEE ICASSP 1997, München, April 21-24, 1997, Vol. 1, pp. 463-466.

Presentations & Invited Talks

- [T1] *A Probabilistic Approach for Robust Leakage-based MU-MIMO Downlink Beamforming with Imperfect Channel State Information*, UC4G Workshop, London, UK, 14 December 2011.
- [T2] *A Max Search Procedure for DOA Estimation with Unknown Number of Signals*, Academia Sinica, Taipei, Taiwan, September 07, 2011.
- [T3] *A Max Search Procedure for DOA Estimation with Unknown Number of Signals*, Chalmers University, Göteborg, Sweden, August 26, 2011.
- [T4] *Robust Transmit Beamforming with Imperfect Channel Information: A Probabilistic Constraint Approach*, Yangzhou University, Yangzhou, China, September 6, 2010.
- [T5] *Robust Transmit Beamforming with Imperfect Channel Information: A Probabilistic Constraint Approach*, Southeast University, Nanjing, China, September 3, 2010.

- [T6] *Robust Transmit Beamforming with Imperfect Channel Information: A Probabilistic Constraint Approach*, Beihang University, Beijing, China, August 27, 2010.
- [T7] *Green Radio The Case for More Efficient Cellular Base-stations*, UK-Taiwan ICT Workshop, National Taiwan University, Taipei, Taiwan, March 31, 2010.
- [T8] *Model Identification for Wireless MIMO Channels Using A Multiple Hypothesis Test*, National Cheng Kung University, Tainan, Taiwan, December 10, 2009.
- [T9] *Model identification for broadband MIMO measurements using a multiple hypothesis test*, Universität Paderborn, Germany, October 19, 2009.
- [T10] *A Probabilistic Constraint Approach for Robust Transmit Beamforming with Imperfect Channel Information*, Fourth IEEE Workshop on Advanced Signal Processing for Wireless Communication Systems, February 12-13, 2009, Copenhagen, Denmark.
- [T11] *Maximum Likelihood Estimation Under Misspecified Numbers of Signals*, National Tsing Hua University, Hsin Chu, Taiwan, April 11, 2008.
- [T12] *Detection of the Number of Signals via False Discovery Rate Criteria and Its Application*, Ecole Nationale Supérieure des Télécommunications, Département du traitement du Signal et des Images, Paris, France, October 23, 2007.
- [T13] *Detection of the Number of Signals Using the Benjamini-Hochberg Procedure*, Workshop on Information Theory and Communications, Peng Hu, Taiwan, August 3, 2007.
- [T14] *On Detection in Single Electron Spin Microscopy*, Quantum Lunch Series, Theoretical Division, Los Alamos National Laboratory, NM, USA, August 28, 2003.
- [T15] *Parametric and Nonparametric Approaches for Detecting Sinusoidal Signals with Random Phase*, Ruhr-Universität Bochum, Bochum, Germany, July 10, 2003.
- [T16] *Detection in Single Electron Spin Microscopy*, DARPA MOSAIC Annual Principle Investigators Review, Seattle, WA, USA, April 29, 2003.
- [T17] *EM and SAGE Algorithms for DOA Estimation*, Seminar, McMaster University, Hamilton, Canada, October 30, 2002.
- [T18] *Optimal Detection in Single Electron Spin Microscopy*, DARPA MOSAIC Workshop, Beverly Hills, Los Angeles, CA, USA, October 16-18, 2002.
- [T19] *Detection of Weak Eastern Mediterranean and Middle East Seismic Events Using GER-ESS Data*, XXVI General Assembly of the European Seismological Commission, Tel Aviv, Israel, August 1998.