

Panagiotis Tsakalides
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PERSONAL DATA

Place of birth Serres, Greece
Date of birth December 15, 1967
Marital Status: Married to Yiota Poirazi (<http://www.imbb.forth.gr/people/poirazi/index.html>),
father of Christos, Andreas, and Melina.

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EDUCATION

1990 - 1995 **University of Southern California, Los Angeles, California, USA**

- Ph.D., Department of Electrical Engineering, December 1995
Thesis: *Array signal processing with alpha-stable distributions—C.L.(Max) Nikias advisor*
- M.Sc., Computer Engineering, Department of Electrical Engineering, December 1991

1985 - 1990 **Aristotelian University of Thessaloniki, Greece**

- Diploma, Department of Electrical Engineering, June 1990
Thesis: *Digital filters for color image processing – I. Pitas advisor*

ACADEMIC & PROFESSIONAL CAREER

11/2002 – present **University of Crete, Department of Computer Science**– Heraklion, Greece

- 3/2010 - present: Professor
- 11/2002 - 2/2010: Associate Professor
- 9/2004 - 9/2006: Department Chairman
- 9/2006 - 9/2008: Department Associate Chairman

09/2002 – present **Foundation for Research & Technology-Hellas, Institute of Computer Science (FORTH-ICS)** – Crete, Greece
Associated Researcher, Telecommunications and Networks Laboratory (TNL)

01/2002 – 09/2002 **University of Thessalia** – Volos, Greece
Visiting Assistant Professor of Computer and Communications Engineering

09/2000 – 03/2002 **Greek Army** – Athens, Greece
Sergeant, Telecommunications Division

01/1999 – 12/2001 **University of Patras** - Patras, Greece
Visiting Assistant Professor of Electrical Engineering

01/1996 – 12/1998 **University of Southern California** – Los Angeles, California, USA
Research Assistant Professor of Electrical Engineering

09/1996 – 12/1998 **MultiSpec Corporation** – Huntington Beach, California, USA
Advanced Systems Engineer

09/1991 – 12/1995 **University of Southern California** – Los Angeles, California, USA
Graduate Research Assistant

RESEARCH FUNDING

- 09/2010 – 08/2014 “CS-ORION: Compressed Sensing for Remote Imaging in Aerial and Terrestrial Surveillance,” European Commission, 7th Framework Programme, Marie Curie Industry-Academia Partnerships and Pathways (IAPP) Grant, €1,290,000. PI: **P. Tsakalides**, collaborators: JL Starck (CEA/Saclay, France), M. Bousquet (SAGEM Defense Securite, France), and D. Tsigos (VTriP, Greece)
- 05/2011 – 11/2013 “APLOE: Applied Physical Layer Orthogonal Frequency Division Multiplexing Encryption.” European Commission, 7th Framework Programme, Marie Curie International Outgoing Fellowships (IOF) Grant, €245,448 PI: **P. Tsakalides**, co-PI: Arsenia Chorti.
- 09/2006 – 08/2010 “Collaborative Signal Processing for Efficient Wireless Sensor Networks,” European Commission, 6th Framework Programme, €1,250,000. PI: **P. Tsakalides**, collaborators: Baltasar Beferull-Lozano (University of Valencia, Spain) and C. Kyriakakis (University of Southern California, USA)
- 03/2006 – 02/2008 “User-Centric Enhancement of Speech in Adverse Noise Conditions with Applications to Speech Communication Systems,” Greek General Secretariat for Research and Technology (GSRT), €60,000. PI: **P. Tsakalides**, co-PIs: A. Mouchtaris (FORTH-ICS) and J. Van der Spiegel (University of Pennsylvania, USA)
- 10/2005 – 09/2008 “Wireless Sensor Networks: Theory and Applications in Structural Health Monitoring,” GSRT & Themeliodomi S.A., €135,000. PI: **P. Tsakalides**
- 10/2005 – 09/2007 “Multiresolution Algorithms for Spaceborne Synthetic Aperture Radar (SAR) Systems,” GSRT & British Council, €11,740. PI: **P. Tsakalides**, co-PI: A. Achim (University of Bristol, UK)
- 03/2005 – 02/2007 “Immersive Audio Rendering and Transmission Technologies,” European Commission, 6th Framework Programme, €80,000. PI: **P. Tsakalides**, co-PI: A. Mouchtaris (FORTH-ICS)
- 03/2004 – 12/2007 “Multichannel Audio Compression and Coding,” Greek Department of Education, €50,000. PI: **P. Tsakalides**
- 08/2003 – 08/2005 “Multicarrier Space-Time Coding for Multichannel Digital Audio Transmission,” GSRT, €60,000. PI: **P. Tsakalides**, co-PI: C. Kyriakakis (U. of Southern California, USA)
- 06/2004 – 05/2006 “3-D Audio Synthesis and Transmission Through Wireless Networks for Teleconferencing and Telepresence Applications,” GSRT and FORTHnet S.A., €91,500. PI: **P. Tsakalides**
- 06/2003 – 12/2004 “Development of a SAR Image Autofocusing Module for Environmental Monitoring with Remote Sensing,” GSRT, €44,000. PI: **P. Tsakalides**
- 07/2001 – 11/2003 “Advanced SAR Image Classification Based on Overcomplete Wavelet Transform and Alpha-Stable Statistical Modelling,” GSRT & British Council, €15,000. PI: A. Stouraitis (U. of Patras, Greece), **co-PIs: P. Tsakalides**, V. Ruiz (U. of Reading, UK)
- 01/1999 – 12/2001 “Advanced Signal Processing Algorithms for Wireless Communications,” GSRT, €100,000. PI: A. Stouraitis, **co-PI: P. Tsakalides**

TEACHING EXPERIENCE

Undergraduate courses

Probability Theory (Fall 2002-2010)
Random Processes (Spring 2005-2011)
Digital Communications (Fall 2003)
Signals and Systems (Spring 2002, Spring 2000)

Graduate courses

Adaptive Signal Processing (Spring 2004-2010, Spring 1999-2000, Fall 1997-1998)
Pattern Recognition (Spring 2003-2004)
Array Signal Processing (Spring 1997)
Modern Spectral Analysis (Spring 1996)
Current Trends in Adaptive and Multisensor Signal Processing: Object Detection, Classification, Direction Finding, and Data Fusion (short course, Summer 1998)

STUDENT ADVISING

Doctoral students

1. Sofia Nikitaki. Topic: "Compressed sensing for RSSI-based localization in ad hoc and sensor networks" 10/2009-present.
2. George Tzagkarakis. Topic: "Bayesian compressed sensing using alpha-stable distributions" 01/2005-11/2009.
3. Kallirroee Flouri. Topic: "Distributed algorithms for support vector machine training in wireless sensor networks," 09/2006-11/2009.

Master's students

1. Pavlos Charalampidis. "Compressed sensing for image and video coding and transmission," 09/2010 – present.
2. Dimitra Emmanouilidou. "Bayesian compressive sensing for magnetic resonance imaging," 01/2009 – 11/2010.
3. Tanish Agrawal. "Compressed sensing for OFDM-based ultra wideband systems," 09/2009 – 09/2010.
4. Aikaterini Gkirtzou. "Mature miRNA identification via the use of a naive Bayes classifier," 09/2006 – 2/2009.
5. Christos Tzagkarakis. "Sinusoidal modeling for multichannel audio coding," 09/2005 – 09/2007.
6. Hara Stefanou. "DNA microarray image enhancement in a multiresolution framework," 09/2005 – 08/2007.
7. Kyriaki Karadimou. "Multichannel audio coding using the multiband source/filter model," 09/2004 – 11/2005.
8. Anastasia Evangelatou. "DVB-RCT physical layer and implementation of the frame adaptation unit," 01/2004 – 03/2005.
9. George Tzagkarakis. "Content-based image retrieval via alpha-stable modeling of texture information," 01/2003 – 12/2004.
10. Alexia Briassouli. "DCT-domain watermark detection using alpha-stable models" 01/2000 – 09/2000.
11. Ioannis Dagres. "Non-Linear Blind Equalization of Noisy Communication Channels" 02/2000 – 05/2001.
12. Filippo Trinci. "Constant False Alarm Rate (CFAR) Radar Detectors in Heavy-Tailed Clutter" 09/1997 – 12/1998.
13. Panagiotis Reveliotis. "Rate-Distortion Theory in the Alpha-Stable Framework" 09/1996 – 12/1997.
14. Raffaele Raspanti. "Space-Time Adaptive Processing for Airborne Radar in Impulsive Clutter Environments" 02/1996 – 12/1996.

EXPERTISE AND GENERAL RESEARCH INTERESTS

1. Digital Signal Processing:
 - Alpha-stable processes and applications
 - SAR, radar, and sonar signal processing
 - Spectral analysis
 - Biomedical image and signal processing
2. Information Theory/Multimedia signal processing:
 - Digital watermarking and data hiding techniques
 - Data quantization and coding
 - Wavelet-based denoising and coding
 - Multichannel audio processing
3. Telecommunication Systems:
 - Signal processing for wireless sensor networks
 - Array antennas
 - Non-linear methods for channel equalization

DISTINCTIONS

09/2008 - present October 2002	Member , ERCIM Network of Innovation/Technology & Knowledge Transfer Experts. A. H. Reeve Best Paper Award by the Institute of Electrical Engineers (IEE) for the paper "Scalar quantisation of heavy-tailed signals," <i>IEE Proceedings – Vision, Image and Signal Processing</i> , vol. 147, no. 5, pp. 475-484, October 2000.
01/2001 – 12/2008 May 2000 July 1997	Associate Editor , Journal of Circuits, Systems and Computers Member of the Selection Committee , Fulbright Foundation Tutorial Speaker , Higher-Order Statistics Workshop, Banff, Canada, Title: "Alpha-Stable Distributions: A New Statistical Signal Processing Framework"
1990 - 1992	Fulbright Foundation scholarship for graduate studies in the US
1990 - 1993	Bodossakis Foundation scholarship for graduate studies in the US
1985 - 1990	National Greek Fellowship for academic excellence throughout undergraduate studies

PROFESSIONAL ACTIVITIES

- **Member Technical Program Committees:** EUSIPCO 2008-11, DPS 2009, 2011, KES IIMSS 2008,...
- **5th Astronomical Data Analysis (ADA V) Conference**, Member of the Organising and Program Committees, Hersonissos, Crete, Greece, May 7-9, 2008.
- **8th Biannual FORTH retreat**, Chairman of the Organizing and Program Committee, October 12-13, 2007.
- **6th IEEE International Conference on Electronics, Circuits, and Systems**, Member of the Organising and Program Committees, Session Chair (Adaptive Signal Processing), Paphos, Cyprus, September 1999.
- **10th Tyrrhenian Workshop on Digital Communications**, Session Chair (Signal Processing for Multimedia Communications), Ischia, Italy, September 1998.
- **Member**, Institute of Electrical and Electronic Engineers (IEEE)
- **Member**, Technical Chamber of Greece (TEE)
- **Reviewer** for: IEEE Trans. on Signal Processing, IEEE Trans. on Vehicular Technology, IEEE Signal Processing Letters, IEEE Communications Letters, IEE Proceedings on Radar, Sonar and Navigation, Signal Processing, Multidimensional Systems and Signal Processing, Journal of Circuits, Systems and Computers, International Journal of Adaptive Control and Signal Processing

PUBLICATIONS

A. BOOK CHAPTERS [4]

1. A. Mouchtaris, C. Tzagkarakis, and **P. Tsakalides**, "Low Bitrate Coding of Spot Audio Signals for Interactive and Immersive Audio Applications," in *New Directions in Intelligent Interactive Multimedia*, G. A. Tsihrintzis and L. C. Jain Eds., Springer Studies in Computational Intelligence, ISBN: 978-3-540-68126-7, 2008, pp. 155-164.
2. A. Mouchtaris and **P. Tsakalides**, "Multichannel Audio Coding for Multimedia Services in Intelligent Environments," in *Multimedia Interactive Services in Intelligent Environments*, G. A. Tsihrintzis and L. C. Jain Eds., Springer Studies in Computational Intelligence, ISBN 978-3-540-78491-3, Germany, 2008, pp. 103-148.
3. **P. Tsakalides** and C. L. Nikias, "Deviation from Normality in Statistical Signal Processing: Parameter Estimation with Alpha-Stable Distributions," in *A Practical Guide to Heavy Tails: Statistical Techniques and Applications*, R. Adler, R. Feldman, and M.S. Taqqu Eds., Boston: Birkhauser, ISBN 0-8176-3951-9, 1998, pp. 379-404.
4. **P. Tsakalides** and C. L. Nikias, "Mine Detection with the Cauchy Beamforming Signal Processing Approach," in *Detection and Remediation Technologies for Mines and Minelike Targets*, A. C. Dubey, R. L. Barnard, C. J. Lowe, and J. E. McFee Eds., Bellingham: The Intern. Society for Optical Eng., ISBN 0-8194-2146-4, 1996, pp. 137-148.

B. REFEREED JOURNAL PAPERS [25]

1. A. Griffin, T. Hirvonen, C. Tzagkarakis, A. Mouchtaris, and **P. Tsakalides**, "Single-channel and Multi-channel Sinusoidal Audio Coding Using Compressed Sensing," to appear in the *IEEE Transactions on Audio, Speech and Language Processing*, 2011.
2. K. Gkirtzou, I. Tsamardinos, **P. Tsakalides**, and P. Poirazi, "MatureBayes: A Probabilistic Algorithm for Identifying the Mature miRNA Within Novel Precursors," *PLoS ONE* 5(8): e11843. doi:10.1371/journal.pone.0011843, August 2010.

3. C. Tzagkarakis, A. Mouchtaris, and **P. Tsakalides**, "A Multichannel Sinusoidal Model Applied to Spot Microphone Signals for Immersive Audio," *IEEE Transactions on Audio, Speech and Language Processing*, vol. 17, no. 8, pp. 1483-1497, November 2009.
4. G. Tzagkarakis, M. Papadopouli, and **P. Tsakalides**, "Trend Forecasting based on Singular Spectrum Analysis of Traffic Workload in a Large-Scale Wireless LAN," *Performance Evaluation*, vol. 66, no. 3, pp. 173-190, 2009 (doi:10.1016/j.peva.2008.10.010).
5. G. Tzagkarakis, B. Beferull-Lozano, and **P. Tsakalides**, "Rotation-Invariant Texture Retrieval via Signature Alignment based on Steerable sub-Gaussian Modeling," *IEEE Transactions on Image Processing*, vol. 17, no. 7, pp. 1212- 1225, June 2008.
6. A. Mouchtaris, K. Karadimou, and **P. Tsakalides**, "Multiresolution Source/Filter Model for Low Bitrate Coding of Spot Microphone Signals," *EURASIP Journal on Audio, Speech, and Music Processing*, vol. 2008, Article ID 624321, doi:10.1155/2008/624321, 2008.
7. G. Tzagkarakis, M. I. Taroudakis, and **P. Tsakalides**, "A Statistical Geoacoustic Inversion Scheme Based on a Modified Radial Basis Functions Neural Network," *Journal of the Acoustical Society of America*, vol. 122, no. 4, pp. 1959-1968, October 2007.
8. A. Mouchtaris, J. Van der Spiegel, P. Mueller, and **P. Tsakalides**, "A Spectral Conversion Approach to Single Channel Speech Enhancement," *IEEE Transactions on Audio, Speech and Language Processing*, vol. 15, no. 4, pp. 1180-1193, May 2007.
9. G. Tzagkarakis, B. Beferull-Lozano, and **P. Tsakalides**, "Rotation-Invariant Texture Retrieval with Gaussianized Steerable Pyramids," *IEEE Transactions on Image Processing*, vol. 15, no. 9, pp. 2702- 2718, September 2006.
10. M. I. Taroudakis, G. Tzagkarakis, and **P. Tsakalides**, "Classification of Shallow-Water Acoustic Signals via Alpha-Stable Modeling of the One-Dimensional Wavelet Coefficients," *Journal of the Acoustical Society of America*, vol. 119, no. 3, pp. 1396-1405, March 2006.
11. A. Briassouli, **P. Tsakalides**, and A. Stouraitis, "Hidden Messages in Heavy-Tails: DCT-Domain Watermark Detection Using Alpha-Stable Models," *IEEE Transactions on Multimedia*, vol. 7, no. 4, pp. 700-715, August 2005.
12. M. Rupi, **P. Tsakalides**, E. Del Re, and C. L. Nikias, "Constant Modulus Blind Equalization Based on Fractional Lower-Order Statistics," *Signal Processing*, vol. 84, no. 5, pp. 881-894, May 2004.
13. A. Achim, **P. Tsakalides**, and A. Bezerianos, "SAR Image Denoising via Bayesian Wavelet Shrinkage based on Heavy-Tailed Modeling," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 41, no. 8, pp. 1773-1784, August 2003.
14. **P. Tsakalides** and C. L. Nikias, "High Resolution Autofocus Techniques for SAR Imaging based on Fractional Lower-Order Statistics," *IEE Proceedings - Radar, Sonar and Navigation*, vol. 148, no. 5, pp. 267-276, October 2001.
15. A. Achim, A. Bezerianos, and **P. Tsakalides**, "Novel Bayesian Multiscale Methods for Speckle Removal in Medical Ultrasound Images," *IEEE Transactions on Medical Imaging*, vol. 20, no. 8, pp. 772-783, August 2001.
16. **P. Tsakalides**, F. Trinci, and C. L. Nikias, "Performance Assessment of CFAR Processors in Pearson-Distributed Clutter," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 36, no. 4, pp. 1377-1386, October 2000.
17. **P. Tsakalides**, P. Reveliotis, and C. L. Nikias, "Scalar Quantization of Heavy-Tailed Signals," *IEE Proceedings - Vision, Image and Signal Processing*, vol. 147, no. 5, pp. 475-484, October 2000.
18. M. Rupi, **P. Tsakalides**, E. Del Re, and C. L. Nikias, "Robust Spatial Filtering of Coherent Sources for Wireless Communications," *Signal Processing*, vol. 80, no. 3, pp. 381-396, March 2000.
19. P. G. Georgiou, **P. Tsakalides**, and C. Kyriakakis, "Alpha-Stable Modeling of Noise and Robust Time-Delay Estimation in the Presence of Impulsive Noise," *IEEE Transactions on Multimedia*, vol. 1, no. 3, pp. 291-301, September 1999.
20. **P. Tsakalides**, R. Raspanti, and C. L. Nikias, "Angle/Doppler Estimation in Heavy-Tailed Clutter Backgrounds," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 35, no. 2, pp. 419-436, April 1999.
21. **P. Tsakalides** and C. L. Nikias, "Robust Space-Time Adaptive Processing (STAP) in Non-Gaussian Clutter Environments," *IEE Proceedings - Radar, Sonar and Navigation*, vol. 146, no. 2, pp. 84-94, April 1999.
22. C. Kyriakakis, **P. Tsakalides**, and T. Holman, "Surrounded by Sound: Acquisition and Rendering Methods for Immersive Audio," *IEEE Signal Processing Magazine*, vol. 16, no. 1, pp. 55-66, January 1999.
23. **P. Tsakalides** and C. L. Nikias, "The Robust Covariation-Based MUSIC (ROC-MUSIC) Algorithm for Bearing Estimation in Impulsive Noise Environments," *IEEE Transactions on Signal Processing*, vol. 44, no. 7, pp. 1623-1633, July 1996.
24. **P. Tsakalides** and C. L. Nikias, "Maximum Likelihood Localization of Sources in Noise Modeled as a Stable Process," *IEEE Transactions on Signal Processing*, vol. 43, no. 11, pp. 2700-2713, November 1995.
25. I. Pitas and **P. Tsakalides**, "Multivariate Ordering in Color Image Filtering," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 1, no. 3, pp. 247-259, September 1991.

C. REFEREED CONFERENCE PAPERS [70]

1. T. Agrawal, V. Lakkundi, A. Griffin, and **P. Tsakalides**, "Compressed Sensing for OFDM UWB Systems," in *Proc. IEEE Radio and Wireless Symposium (RWS '11)*, Phoenix, AZ, January 16-20, 2011.
2. S. Nikitaki and **P. Tsakalides**, "Localization in Wireless Networks via Spatial Sparsity," in *Proc. 44th Annual Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Nov. 7-10, 2010.
3. D. Milioris, L. Kriara, A. Papakonstantinou, G. Tzagkarakis, **P. Tsakalides**, and M. Papadopouli, "Empirical evaluation of signal-strength fingerprint positioning in wireless LANs," in *Proc. 13th ACM/IEEE Intern. Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM '10)*, Bodrum, Turkey, October 17-21, 2010.
4. A. Achim, B. Buxton, G. Tzagkarakis, and **P. Tsakalides**, "Compressive Sensing for Ultrasound RF Echoes using Alpha-Stable Distributions," in *Proc. 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC '10)*, Buenos Aires, Argentina, Aug. 31-Sept. 4, 2010.
5. M. Agrawal, **P. Tsakalides**, and A. Achim, "Medical Image Fusion using the Convolution of Meridian Distributions," in *Proc. 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC '10)*, Buenos Aires, Argentina, Aug. 31-Sept. 4, 2010.
6. A. Griffin, T. Hirvonen, A. Mouchtaris, and **P. Tsakalides**, "Multichannel Audio Coding Using Sinusoidal Modelling and Compressed Sensing," in *Proc. 18th European Signal Processing Conference (EUSIPCO '10)*, Aalborg, Denmark August 23-27, 2010.
7. G. Tzagkarakis and **P. Tsakalides**, "Greedy Sparse Reconstruction of Non-negative Signals Using Symmetric Alpha-Stable Distributions," in *Proc. 18th European Signal Processing Conference (EUSIPCO '10)*, Aalborg, Denmark August 23-27, 2010.
8. G. Tzagkarakis and **P. Tsakalides**, "Distributed Compressed Sensing of Non-negative Signals Using Symmetric Alpha-Stable Distributions," in *Proc. 18th European Signal Processing Conference (EUSIPCO '10)*, Aalborg, Denmark August 23-27, 2010.
9. G. Tzagkarakis and **P. Tsakalides**, "Sparse Representation of Medical Images via Compressed Sensing using Gaussian Scale Mixtures," in *IEEE International Symposium on Biomedical Imaging (ISBI 2010)*, Rotterdam, The Netherlands, April 14-17, 2010.
10. G. Tzagkarakis and **P. Tsakalides**, "Bayesian Compressed Sensing Imaging using a Gaussian Scale Mixture," in *International Conference on Acoustics, Speech, and Signal Processing (ICASSP '10)*, Dallas, TX, March 14-19, 2010.
11. G. Tzagkarakis, D. Milioris, and **P. Tsakalides**, "Multiple-Measurement Bayesian Compressed Sensing using GSM Priors for DOA Estimation," in *International Conference on Acoustics, Speech, and Signal Processing (ICASSP '10)*, Dallas, TX, March 14-19, 2010.
12. E. Kornaropoulos and **P. Tsakalides**, "A Novel kNN Classifier for Acoustic Vehicle Classification based on Alpha-Stable Statistical Modelling," in *Proc. 2009 IEEE Workshop on Statistical Signal Processing (SSP '09)*, Cardiff, Wales, UK, August 31- September 3, 2009.
13. G. Tzagkarakis and **P. Tsakalides**, "Bayesian Compressed Sensing of a Highly Impulsive Signal in Heavy-Tailed Noise using a Multivariate Cauchy Prior," in *Proc. 17th European Signal Processing Conference (EUSIPCO '09)*, Glasgow, Scotland, UK, August 24-28, 2009.
14. K. Flouri, B. Beferull-Lozano, and **P. Tsakalides**, "Optimal Gossip Algorithm for Distributed Consensus SVM Training in Wireless Sensor Networks," in *Proc. 16th International Conference on Digital Signal Processing (DSP '09)*, Santorini, Greece, July 5-7, 2009.
15. A. Griffin, T. Hirvonen, A. Mouchtaris, and **P. Tsakalides**, "Encoding the Sinusoidal Model of an Audio Signal using Compressed Sensing," in *Proc. 2009 IEEE International Conference on Multimedia & Expo (ICME '09)*, Cancun, Mexico, June 28-July 3, 2009.
16. A. Griffin, C. Tzagkarakis, T. Hirvonen, A. Mouchtaris, and **P. Tsakalides**, "Exploiting the Sparsity of the Sinusoidal Model Using Compressed Sensing for Audio Coding," in *Proc. 2009 Workshop on Signal Processing with Adaptive Sparse Structured Representations (SPARS '09)*, Saint-Malo, France, April 6-9, 2009.
17. K. Gkirtzou, **P. Tsakalides**, and P. Poirazi, "Mature miRNA Identification via the Use of a Naive Bayes Classifier," in *Proc. 8th IEEE International Conference on BioInformatics and BioEngineering (BIBE '08)*, Athens, Greece, October 8-10, 2008.
18. A. Griffin and **P. Tsakalides**, "Compressed Sensing of Audio Signals Using Multiple Sensors," in *Proc. 16th European Signal Processing Conference (EUSIPCO '08)*, Lausanne, Switzerland, August 25-29, 2008.
19. C. Tzagkarakis, A. Mouchtaris, and **P. Tsakalides**, "Modeling and Coding of Spot Microphone Signals for Immersive Audio Based on the Sinusoidal Model," in *Proc. 16th European Signal Processing Conference (EUSIPCO '08)*, Lausanne, Switzerland, August 25-29, 2008.
20. K. Flouri, B. Beferull-Lozano, and **P. Tsakalides**, "Distributed Consensus Algorithms for SVM training in Wireless Sensor Networks," in *Proc. 16th European Signal Processing Conference (EUSIPCO '08)*, Lausanne, Switzerland, August 25-29, 2008.

21. A. Mouchtaris, C. Tzagkarakis, and **P. Tsakalides**, “Low Bitrate Coding of Spot Audio Signals for Interactive and Immersive Audio Applications,” in *Proc. 1st International Symposium on Intelligent Interactive Multimedia Systems and Services (KES-IIMSS '08)*, University of Piraeus, Greece, July 9-11, 2008.
22. T. Wan, G. Tzagkarakis, **P. Tsakalides**, N. Canagarajah, and A. Achim, “Context Enhancement Through Image Fusion: A Multiresolution Approach Based on Convolution of Cauchy Distributions,” in *Proc. 2008 International Conference on Acoustics, Speech, and Signal Processing (ICASSP '08)*, Las Vegas, NV, March 30 – April 4, 2008.
23. A. Griffin and **P. Tsakalides**, “Compressed Sensing of Audio Signals in a Wireless Sensor Network,” in *Proc. 5th European Workshop on Wireless Sensor Networks (EWSN '08)*, Bologna, Italy, January 30-February 1, 2008.
24. K. Flouri, B. Beferull-Lozano, and **P. Tsakalides**, “Selective Gossiping for SVM Training in Wireless Sensor Networks,” in *Proc. 5th European Workshop on Wireless Sensor Networks (EWSN '08)*, Bologna, Italy, January 30-February 1, 2008.
25. H. Stefanou, T. Margaritis, D. Kafetzopoulos, K. Marias, and **P. Tsakalides**, “Microarray Image Denoising Using a Two-Stage Multiresolution Technique,” in *Proc. 2007 International Conference on Bioinformatics and Biomedicine (BIBM '07)*, Silicon Valley, CA, November 2-4, 2007.
26. G. Tzagkarakis, M. Papadopouli, and **P. Tsakalides**, “Singular Spectrum Analysis of Traffic Workload in a Large-Scale Wireless LAN,” in *Proc. 10th ACM/IEEE Intern. Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM '07)*, Chania, Greece, October 22-26, 2007.
27. C. Tzagkarakis, A. Mouchtaris, and **P. Tsakalides**, “Modeling Spot Microphone Signals using the Sinusoidal Plus Noise Approach,” in *Proc. 2007 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA '07)*, Mohonk Mountain House, New Paltz, NY, October 21-24, 2007.
28. C. Tzagkarakis, A. Mouchtaris, and **P. Tsakalides**, “Sinusoidal Modeling of Spot Microphone Signals based on Noise Transplantation for Multichannel Audio Coding,” in *Proc. 15nd European Signal Processing Conference (EUSIPCO '07)*, Poznan, Poland, September 3-7, 2007.
29. K. Karadimou, A. Mouchtaris, and **P. Tsakalides**, “Packet Loss Concealment for Multichannel Audio Using the Multiband Source/Filter Model,” in *Proc. 40nd Annual Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, October 29-November 1, 2006.
30. K. Flouri, B. Beferull-Lozano, and **P. Tsakalides**, “Training a SVM-based Classifier in Distributed Sensor Networks,” in *Proc. 14nd European Signal Processing Conference (EUSIPCO '06)*, Florence, Italy, September 4-8, 2006.
31. K. Karadimou, A. Mouchtaris, and **P. Tsakalides**, “Multiband Source/Filter Representation of Multichannel Audio for Reduction of Inter-channel Redundancy,” in *Proc. 14nd European Signal Processing Conference (EUSIPCO '06)*, Florence, Italy, September 4-8, 2006.
32. C. Tzagkarakis, A. Mouchtaris, and **P. Tsakalides**, “Musical Genre Classification via Generalized Gaussian and Alpha-Stable Modeling,” in *Proc. 2006 International Conference on Acoustics, Speech, and Signal Processing (ICASSP '06)*, Toulouse, France, May 14-19, 2006.
33. K. Flouri, B. Beferull-Lozano, and **P. Tsakalides**, “Energy-Efficient Distributed Support Vector Machines for Wireless Sensor Networks,” in *Proc. 2006 European Workshop on Wireless Sensor Networks (EWSN '06)*, Zurich, Switzerland, February 13-15, 2006.
34. K. Karadimou, A. Mouchtaris, and **P. Tsakalides**, “Multichannel Audio Modeling and Coding Using a Multiband Source/Filter Model,” in *Proc. 39nd Annual Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, October 30-November 2, 2005.
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D. OTHER PUBLICATIONS [3]

1. "The ASPIRE Project – Novel Signal Processing for Future Sensor Networks," *The Parliament Magazine's Research Review*, no. 13, p. 61, June 2010.
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3. "Integrating WSN into the Fabric of the Future," *e-Strategies Projects*, no. 8, pp. 18- 20, December 2008.

E. INVITED LECTURES [22]

1. "Bayesian Estimation, Classification, and Denoising Based on Alpha-Stable Statistical Modeling" *5th Astronomical Data Analysis (ADA V) Conference, Hersonissos Crete*, May 8, 2008.
2. "Alpha-Stable Distributions: Theory & Applications," presented to the *Non-Linear Speech Processing Workshop, Heraklion, Crete, Greece*, October 20, 2005.
3. "Sensing and Actuation: Merging the Physical and Virtual Worlds with Wireless Sensor Networks," presented to the *Heraklion Sorooptimist Chapter, Heraklion, Crete, Greece*, May 7, 2004.
4. "Modern Remote Sensing Techniques for Environmental Monitoring," presented to the Computer Science Department, *Agricultural University of Athens, Greece*, December 23, 2002.
5. "Novel Bayesian Multiscale Methods for Speckle Removal in SAR Images," presented to the Department of Cybernetics, *University of Reading, Reading, United Kingdom*, November 8, 2002.
6. "Hidden Messages in Heavy-Tails: DCT-Domain Watermark Detection Using Alpha-Stable Models," presented to the Statistics Department, *Athens University of Economics and Business, Greece*, November 22, 2000.
7. "Stable Processes and their Application in Communication, Radar, and Audio System Design," presented to the Department of Electrical and Computer Engineering, *University of California at Irvine, CA*, January 10, 2000.
8. "Deviating from the Gaussian Law: Alpha-Stable Processes and their Applications in Signal Processing," presented to the Department of Electrical and Computer Engineering, *University of Patras, Greece*, November 25, 1999.
9. "Alpha-Stable Processes and their Applications in Communication System Design," presented to the Department of Mathematics, *University of Thessaloniki, Greece*, November 9, 1999.
10. "Adaptive Space-Time Signal Processing for Telecommunication and Radar Systems," presented to the Department of Mathematics, *University of Ioannina, Greece*, September 30, 1999.
11. "Array Signal Processors for Mobile Communication Systems," presented to the Department of Computer Science, *University of Crete, Greece*, February 25, 1999.
12. "Alpha-Stable Distributions: A New Statistical Signal Processing Framework," plenary talk at the *Higher-Order Statistics Workshop, Banff, Canada*, July 22, 1997.
13. "Signal Processing with Alpha-Stable Distributions: Current and Future Trends," presented to the Department of Electrical Engineering, *Polytechnic University, Brooklyn, NY*, March 10, 1997.
14. "New Results in Non-Stationary Signal Processing," presented to the Department of Electrical and Computer Engineering, *University of Alberta, Edmonton, Canada*, March 7, 1997.
15. "Applications of Alpha-Stable Theory in Engineering: Space-Time Adaptive Processing in Severe Radar Clutter," presented to the Department of Statistics and Applied Mathematics, *University of California at Santa Barbara, CA*, December 3, 1996.

16. "Robust Methods for Submarine Communications with Alpha-Stable Distributions," presented at the *Workshop on New Techniques for Radio Communications and Wireless Networks, Naval Command, Control and Ocean Surveillance Center, RDT&E Division, San Diego, CA*, September 11, 1996.
17. "Advanced Signal Processing Methods for Radar Systems," presented at the *Litton Corporate Wide Wavelet Seminar, Litton Applied Technology, San Jose, CA*, July 10, 1996.
18. "Multidisciplinary Research on Advanced, High-Speed, Adaptive Signal Processing for Radar Sensors," presented at the *Space-Time Adaptive Processing University Initiative Workshop, Rome Laboratory, Rome, NY*, June 13, 1996.
19. "Applications of Lower-Order Statistics in Radar Array Signal Processing," presented to the Department of Electrical Engineering, *University of Virginia, Charlottesville, VA*, March 18, 1996.
20. "Array Signal Processing with Alpha-Stable Distributions," presented at the *Stable Time Series Workshop, University of California at Santa Barbara, CA*, December 3-4, 1995.
21. "Advanced Acoustic Signal Detection and Localization with Lower-Order Statistics," presented at the *130th Meeting of the Acoustical Society of America, St. Louis, MO*, November 30, 1995.
22. "Robust Statistical Signal Processing with Alpha-Stable Distributions and Fractional Lower-Order Moments," presented to the Department of Electrical Engineering, *University of Delaware, Newark, DE*, November 27, 1995.