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- Book chapters

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- Patents
    - [1] Prescribed modulus chirp-like waveforms with multiple frequency notches. US Patent 8830120. I. W. Selesnick and S. U. Pillai. September 9, 2014.  
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  - Online ‘open-source’ educational articles (non-reviewed)
    - [1] I. Selesnick, *L1-Norm Penalized Least Squares with SALSA*. Connexions, January 18, 2014.  
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    - [7] I. Selesnick. *The Short-Time Fourier Transform and Speech Denoising*. Connexions. October 5, 2009.  
<http://cnx.org/content/m32294/1.1/>
    - [8] I. Selesnick. *Sparse Signal Restoration*. Connexions. September 25, 2009.  
<http://cnx.org/content/m32168/1.3/>
    - [9] I. Selesnick and I. Bayram. *Total Variation Filtering*. Connexions. August 13, 2009.  
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  - Invited conference/symposia talks
    - [1] Wavelet denoising without wavelets. *Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability*. Siena, Italy. September 28 – October 1, 2014.
    - [2] Sparse signal representation and the tunable Q-factor wavelet transform. February Fourier Talks 2012 (FFT 2012). University of Maryland, College Park, MD. February 16, 2012.
    - [3] Sparse signal representation and the tunable Q-factor wavelet transform. *International Conference on Applied Harmonic Analysis and Multiscale Computing (AHAMC)*. Edmonton, Canada. July 25-28, 2011.

- [4] The decomposition of signals into resonance components. *American Mathematical Society 2011 Spring Southeastern Section Meeting (Meeting #1068)*. Georgia Southern University. Statesboro, GA, March 12-13, 2011.
- [5] Signal restoration using non-dyadic wavelet transforms with tunable Q-factors. *Workshop on Sampling and Reconstruction: Applications and Advances (10w5122)*. Banff International Research Station. November 29, 2010.
- [6] Geometrically oriented wavelet transforms using rational dilations. *Advanced Concepts for Intelligent Vision Systems (ACIVS)*, October 2008, Juan-les-Pins, France. Plenary talk.
- [7] Design and application of wavelet frames with three generators. *International Conference on the Interactions between Wavelets and Splines*, University of Georgia, Athens, May 2005.
- [8] Modeling the inter-scale phase relationship of complex wavelet coefficients of natural images. *Second International Conference on Computational Harmonic Analysis*, Vanderbilt University, Nashville, TN. May 2004.
- [9] Analytic oriented wavelet frames and applications. *Sixth International Meeting of the American Mathematical Society*, Houston, TX, May 2004.
- [10] Motion-based 3-D wavelet frames for video processing. *Canadian Mathematical Society Summer Meeting*, University of Alberta, Edmonton, Alberta, Canada. June 14, 2003.
- [11] Motion selective wavelet frames for video processing. *American Mathematical Society Sectional Meeting*, Orlando, FL. November 9-10, 2002.
- [12] Bivariate probability models and shrinkage functions. *DIMACS Workshop on Source Coding and Harmonic Analysis*. Rutgers University, NJ, May 8-10, 2002.
- [13] The use of Groebner bases in the design of wavelets. *American Mathematical Society Meeting in Hoboken*. April 28-29, 2001.
- [14] The characterization and design of Hilbert transform pairs of wavelet bases. *Conference on Information Sciences and Systems*. The Johns Hopkins University, March 21-23, 2001.
- [15] The design of smooth wavelet tight frames with zero moments. *American Mathematical Society Meeting*. Toronto. September 23, 2000.
- [16] Gröbner bases and wavelet design. *IMACS Conference on Applications of Computer Algebra*, Spain, June 25-27 1999.
- [17] Multiwavelets with extra approximation properties. *Wavelets and Applications Workshop*, Ticino, Switzerland, September 28 - October 2, 1998.
- [18] Parallel structured prime length FFTs. *Ninth SIAM Conference on Parallel Processing for Scientific Computing*, San Antonio, March 22-24, 1999.

- Seminar talks

- [1] Resonance-based Signal Analysis. Department of Mechanical Engineering, University of Connecticut. Friday, November 11, 2014.
- [2] Wavelets, Sparsity, and Resonance in Signal Processing. Colloquium/Invited lecture, Center for Applied Mathematical Sciences (CAMS), Farmingdale State College, Farmingdale, NY. Friday, October 26, 2012.
- [3] Sparsity in Signal Processing. Shanks Mini-Workshop on Inverse Magnetization Problems Vanderbilt University, Nashville, TN. April 28, 2012
- [4] Resonance-Based Signal Analysis, Naval Research Laboratory, Washington DC, May 12, 2011.
- [5] Resonance-Based Signal Analysis, Instituto Superior Técnico, Lisbon, Portugal, January 19, 2011.
- [6] Resonance-Based Signal Analysis, Imperial College, Dept of Electrical Engineering, London, UK, July 15, 2010.
- [7] Resonance-Based Signal Analysis, Laboratoire d'Informatique Gaspard Monge, Université Paris-Est, Marne la Vallée, July 13, 2010.

- [8] Resonance-Based Signal Analysis, IFP (French Institute of Petroleum), Paris, France, July 12, 2010.
- [9] Resonance-Based Signal Analysis, Istituto per le Applicazioni del Calcolo “M. Picone”, Rome, Italy, July 7, 2010.
- [10] Decomposition of EEG signals using new constant-Q transforms and morphological component analysis, Universität Erlangen-Nürnberg, Erlangen, Germany, March 20, 2009.
- [11] EEG signal analysis using morphological component analysis and a new rational-dilation wavelet transform, Henry Pointcare Institute, Paris, France, March 17, 2009.
- [12] Orthonormal and Overcomplete Wavelet Transforms Based on Rational Sampling Factors, Tampere University of Technology, Tampere, Finland, December 7, 2007.
- [13] Noise Reduction for Bio-images by Wavelet-Based Filtering, 2007 Annual Convention of the Chinese Institute of Engineers, November 10, 2007.
- [14] Noise Reduction by Wavelet Processing, SUNY-Downstate Medical Center, September 28, 2007.
- [15] Laplace Random Vectors in AWGN and the Higher-Density Wavelet Transform, Harvard University, March 22, 2007.
- [16] The Higher-Density Discrete Wavelet Transform, Tampere University of Technology, Tampere, Finland, August 4, 2006.
- [17] Digital Sound Synthesis for Strings and Drums (Isotropic and Non-isotropic) Using the Functional Transformation Method, Fraunhofer Institute for Digital Media Technology, Ilmenau, Germany, July 25, 2006.
- [18] Digital Sound Synthesis for Strings and Drums (Isotropic and Non-isotropic) Using the Functional Transformation Method, Universität Erlangen-Nürnberg, Erlangen, Germany, July 24, 2006.
- [19] Multidimensional Wavelet-Based Noise Reduction, Siemens, Forchheim, Germany, July 5, 2006.
- [20] Motion-based 3-D wavelet frames for video processing, New York University, September 29, 2004.
- [21] Bivariate Shrinkage Functions for Wavelet-based Image Denoising, University of Alberta, Edmonton, Alberta, Canada, June 17, 2003.
- [22] Motion-Based 3-D Wavelets for Video Processing, Philips Research, Briarcliff Manor, NY, April 8, 2003.
- [23] Motion-Based 3-D Wavelets for Video Processing, Princeton University, Princeton, NJ, April 2, 2003.
- [24] Motion-Based 3-D Wavelets for Video Processing, John Hopkins University, Baltimore, MD, April 1, 2003.
- [25] Multivariate Non-Gaussian Probability Models for Wavelet-Based Image Denoising, University of Erlangen-Nürnberg, Germany, February 28, 2003.
- [26] The Double Density Dual-Tree DWT, Bell Laboratories, Murray Hill, NJ, April 19, 2001.
- [27] Wavelet Tight Frames and their Design using Gröbner Bases, Drexel University, Philadelphia, April 20, 2000.
- [28] Smooth Wavelet Frames with Zero Moments, University of Missouri, St. Louis, March 24, 2000.
- [29] The Application of Algebraic Geometry and Approximation Theory to Power Electronics, with D. Czarkowski, D. Chudnovsky, and G. Chudnovsky. Polytechnic University, Brooklyn, February 9, 1999.
- [30] Multiwavelets with Extra Approximation Properties and Cardinal Multiwavelets. Dartmouth College, New Hampshire, November 9, 1998.
- [31] Multiwavelet Bases and the Slantlet Transform. Bell Labs, Lucent Technologies, New Jersey April 24, 1998.
- [32] Multiwavelet Bases. Igel Seminar, Schnaittach-Osternohe, Germany Oct 22, 1997.

- [33] On the Slantlet Transform. Technical University of Vienna, Austria, October 17, 1997.
- [34] Advances in Digital Filtering. Universitatea Politehnica, Timisoara, Romania, Oct 13, 1997.

- Conference posters

- [1] Transient artifact reduction using sparse optimization (Poster). T. Zhang, H. L. Graber, R. L. Barbour, and I. W. Selesnick. *Biomedical Optics – Meeting of the Optical Society (OSA)*. Miami, Florida. April 26-30, 2014.
- [2] Algorithms for simultaneous low-pass filtering and total variation denoising of neuroimaging data (Poster). I. Selesnick, H. Graber, D. Pfeil, and R. Barbour. *19th Annual Meeting of the Organization for Human Brain Mapping (OHBM)*. Seattle, June 16-20 2013.
- [3] Speech enhancement by translation-invariant group shrinkage/thresholding (Poster). P.-Y. Chen and I. W. Selesnick. *3rd GNY Area Multimedia and Vision Meeting*. City College of New York, New York, NY. June 14, 2013.
- [4] Sparse frequency analysis with sparse-derivative amplitude and phase functions (Poster). Y. Ding and I. W. Selesnick. *IEEE Signal Processing in Medicine and Biology Symposium*. City College of New York, New York, NY. December 1, 2012.
- [5] ECG denoising and QRS detection based on sparse derivatives (Poster). Xiaoran Ning and Ivan W. Selesnick *IEEE Signal Processing in Medicine and Biology Symposium*. City College of New York, New York, NY. December 1, 2012.
- [6] Wavelet Design by Groebner Bases (Poster). East Coast Computer Algebra Day 2002, LaGuardia Community College, New York, May 18, 2002.