Ivan Selesnick January 17, 2020

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[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. http://cnx.org/content/m31292/1.1/

- Invited conference talks

[1] Sparse Regularization via Convex Analysis. *Operator Splitting Methods in Data Analysis Workshop.* Flatiron Institute, New York, NY. March 20-22, 2019.

[2] Sparse Regularization via Convex Analysis. *Efficient Operator Splitting Techniques for Complex System and Large Scale Data Analysis.* Tsinghua Sanya International Mathematics Forum, Sanya, Hainan, China. January 14-18, 2019.

[3] Nonlinear filtering using sparse signal models. *Mathematics of Signals*, Farmingdale State College, Farmingdale, NY. September 23, 2016.

[4] Wavelet denoising without wavelets. *Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability.* Siena, Italy. September 28 – October 1, 2014.

[5] 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.

[6] 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.

[7] 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.

[8] 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.

[9] Geometrically oriented wavelet transforms using rational dilations. *Advanced Concepts for Intelligent Vision Systems (ACIVS)*, October 2008, Juan-les-Pins, France. Plenary talk.

[10] Design and application of wavelet frames with three generators. *International Conference on the Interactions between Wavelets and Splines*, University of Georgia, Athens, May 2005.

[11] 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.

[12] Analytic oriented wavelet frames and applications. *Sixth International Meeting of the American Mathematical Society*, Houston, TX, May 2004.

[13] Motion-based 3-D wavelet frames for video processing. *Canadian Mathematical Society Summer Meeting*, University of Alberta, Edmonton, Alberta, Canada. June 14, 2003.

[14] Motion selective wavelet frames for video processing. *American Mathematical Society Sectional Meeting*, Orlando, FL. November 9-10, 2002.

[15] Bivariate probability models and shrinkage functions. *DIMACS Workshop on Source Coding and Harmonic Analysis.* Rutgers University, NJ, May 8-10, 2002.

[16] The use of Groebner bases in the design of wavelets. *American Mathematical Society Meeting in Hoboken.* April 28-29, 2001.

[17] 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.

[18] The design of smooth wavelet tight frames with zero moments. *American Mathematical Society Meeting.* Toronto. September 23, 2000.

[19] Gröbner bases and wavelet design. *IMACS Conference on Applications of Computer Algebra*, Spain, June 25-27 1999.

[20] Multiwavelets with extra approximation properties. *Wavelets and Applications Workshop*, Ticino, Switzerland, September 28 - October 2, 1998.

[21] Parallel structured prime length FFTs. *Ninth SIAM Conference on Parallel Processing for Scientific Computing,* San Antonio, March 22-24, 1999.

- Seminar talks

[1] Sparse Regularization via Convex Analysis. The Graduate Center, City University of New York, May 20, 2019.

[2] Biomedical Time-Series Analysis using Sparse Regularization. Biomedical Engineering Department Seminar. The City College of New York. November 21, 2018.

[3] Nonlinear Filtering via New Sparse Regularizers and Convex Analysis. ECE Department Colloquium. University of Virginia. November 2, 2018.

[4] Resonance-based Signal Analysis for Speech, Biomedical, and Geophysical Applications. IEEE NJIT talk. New Jersey Institute of Technology. October 16, 2018.

[5] Biomedical Time-Series Analysis using Sparse Signal Processing. Biomedical Engineering Colloquium, NYU Tandon School of Engineering. September 27, 2018.

[6] Sparse Regularization via Convex Analysis. Center for Data Science, New York University. September 20, 2018.

[7] Sparse-regularized Least Squares and Nonlinear Smoothing. University of Bologna, Italy. July 5, 2017.

[8] Sparse-regularized Least Squares and Nonlinear Smoothing. The Graduate Center, The City University of New York (CUNY), New York, NY. Friday, December 9, 2016.

[9] Physical Modeling of Physical and Non-Physical Instruments & Sparse Optimization for Linear Inverse Problems. NYU Music and Audio Research Laboratory, New York University, Thursday, April 30, 2015.

[10] Linear Inverse Problems and Sparse Regularization. Department of Basic and Applied Sciences for Engineering, La Sapienza University of Rome. Friday, January 23, 2015.

[11] Resonance-based Signal Analysis. Department of Mechanical Engineering, University of Connecticut. Friday, November 11, 2014.

[12] 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.

[13] Sparsity in Signal Processing. Shanks Mini-Workshop on Inverse Magnetization Problems Vanderbilt University, Nashville, TN. April 28, 2012

[14] Resonance-Based Signal Analysis, Naval Research Laboratory, Washington DC, May 12, 2011.

[15] Resonance-Based Signal Analysis, Instituto Superior Técnico, Lisbon, Portugal, January 19, 2011.

[16] Resonance-Based Signal Analysis, Imperial College, Dept of Electrical Engineering, London, UK, July 15, 2010.

[17] Resonance-Based Signal Analysis, Laboratoire d'Informatique Gaspard Monge, Universite Paris-Est, Marne la Vallee, July 13, 2010.

[18] Resonance-Based Signal Analysis, IFP (French Institute of Petroleum), Paris, France, July 12, 2010.

[19] Resonance-Based Signal Analysis, Istituto per le Applicazioni del Calcolo "M. Picone", Rome, Italy, July 7, 2010.

[20] Decomposition of EEG signals using new constant-Q transforms and morphological component analysis, Universität Erlangen-Nürnberg, Erlangen, Germany, March 20, 2009.

[21] EEG signal analysis using morphological component analysis and a new rational-dilation wavelet transform, Henry Pointcare Institute, Paris, France, March 17, 2009.

[22] Orthonormal and Overcomplete Wavelet Transforms Based on Rational Sampling Factors, Tampere University of Technology, Tampere, Finland, December 7, 2007.

[23] Noise Reduction for Bio-images by Wavelet-Based Filtering, 2007 Annual Convention of the Chinese Institute of Engineers, November 10, 2007.

[24] Noise Reduction by Wavelet Processing, SUNY-Downstate Medical Center, September 28, 2007.

[25] Laplace Random Vectors in AWGN and the Higher-Density Wavelet Transform, Harvard University, March 22, 2007.

[26] The Higher-Density Discrete Wavelet Transform, Tampere University of Technology, Tampere, Finland, August 4, 2006.

[27] 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.

[28] Digital Sound Synthesis for Strings and Drums (Isotropic and Non-isotropic) Using the Functional Transformation Method, Universität Erlangen-Nürnberg, Erlangen, Germany, July 24, 2006.

[29] Multidimensional Wavelet-Based Noise Reduction, Siemens, Forchheim, Germany, July 5, 2006.

[30] Motion-based 3-D wavelet frames for video processing, New York University, September 29, 2004.

[31] Bivariate Shrinkage Functions for Wavelet-based Image Denoising, University of Alberta, Edmonton, Alberta, Candada, June 17, 2003.

[32] Motion-Based 3-D Wavelets for Video Processing, Philips Research, Briarcliff Manor, NY, April 8, 2003.

[33] Motion-Based 3-D Wavelets for Video Processing, Princeton University, Princeton, NJ, April 2, 2003.

[34] Motion-Based 3-D Wavelets for Video Processing, John Hopkins University, Baltimore, MD, April 1, 2003.

[35] Multivariate Non-Gaussian Probability Models for Wavelet-Based Image Denoising, University of Erlangen-Nurnbert, Germany, February 28, 2003.

[36] The Double Density Dual-Tree DWT, Bell Laboratories, Murray Hill, NJ, April 19, 2001.

[37] Wavelet Tight Frames and their Design using Gröbner Bases, Drexel University, Philadelphia, April 20, 2000.

[38] Smooth Wavelet Frames with Zero Moments, University of Missouri, St. Louis, March 24, 2000.

[39] 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.

[40] Multiwavelets with Extra Approximation Properties and Cardinal Multiwavelets. Dartmouth College, New Hampshire, November 9, 1998.

[41] Multiwavelet Bases and the Slantlet Transform. Bell Labs, Lucent Technologies, New Jersey April 24, 1998.

[42] Multiwavelet Bases. Igel Seminar, Schnaittach-Osternohe, Germany Oct 22, 1997.

[43] On the Slantlet Transform. Technical University of Vienna, Austria, October 17, 1997.

[44] 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.