

List of Publications

Herwig Wendt

1 International Journals

- [1] R. Leonarduzzi, P. Abry, H. Wendt, S. Jaffard, H. Touchette, "A Generalized Multifractal Formalism for the Estimation of Nonconcave Multifractal Spectra," 2018. *Submitted*.
- [2] H. Wendt, P. Abry, K. Kiyono, J. Hayano, E. Watanabe, Y. Yamamoto, "Wavelet p-Leader Non Gaussian Multiscale Expansions for Heart Rate Variability Analysis in Congestive Heart Failure Patients," IEEE T. Biomedical Engineering, 2018. *In press*. [.pdf](#)
- [3] H. Wendt, S. Combexelle, Y. Altmann, J.-Y. Tourneret, S. McLaughlin, P. Abry, "Multifractal analysis of multivariate images using gamma Markov random field priors," SIAM J. on Imaging Sciences (SIIMS), vol. 11, no. 2, pp. 1294-1316, 2018. [.pdf](#)
- [4] G. Valenza, H. Wendt, K. Kiyono, J. Hayano, E. Watanabe, Y. Yamamoto, P. Abry, R. Barbieri, "Multifractal Point-Process Heartbeat Dynamics: a Congestive Heart Failure Survivor Prediction Study," IEEE T. Biomedical Engineering, 2017. *In press*. [www](#) | [.pdf](#)
- [5] S. Jaffard, S. Seuret, H. Wendt, R. Leonarduzzi, S. Roux, P. Abry, "Multivariate multifractal analysis," Applied and Computational Harmonic Analysis, 2017. *In press*. [www](#) | [.pdf](#)
- [6] R. Leonarduzzi, P. Abry, H. Wendt, K. Kiyono, Y. Yamamoto, E. Watanabe, J. Hayano, "Scattering Transform of Heart Rate Variability for the Prediction of Ischemic Stroke in Patients with Atrial Fibrillation," Methods of Information in Medicine, vol. 57, no. 3, pp. 141-145, 2018. [.pdf](#)
- [7] H. Wendt, G. Didier, S. Combexelle, P. Abry, "Multivariate Hadamard self-similarity: testing fractal connectivity," Physica D, vol. 356-357, pp. 1-36, 2017. [.pdf](#)
- [8] J. Frecon, N. Pustelnik, N. Dobigeon, H. Wendt, P. Abry, "Bayesian selection for the l2-Potts model regularization parameter: 1D piecewise constant signal denoising," IEEE T. Signal Proces., vol. 65, no. 19, pp. 5215-5224, 2017. [.pdf](#)
- [9] R. Leonarduzzi, H. Wendt, P. Abry, S. Jaffard, C. Melot, "Finite resolution effects in p-leader multifractal analysis," IEEE T. Signal Proces., 2017, vol. 65, no. 13, pp. 3359-3368. [.pdf](#)
- [10] R. Fontunge, P. Abry, K. Fukuda, D. Veitch, K. Cho, P. Borgnat, H. Wendt, "Scaling in Internet Traffic: a 14 year and 3 day longitudinal study, with multiscale analyses and random projections," IEEE/ACM T. Networking, vol. 25, no. 4, 2017. [.pdf](#)
- [11] N. Pustelnik, H. Wendt, P. Abry, N. Dobigeon, "Combining local regularity estimation and total variation optimization for scale-free texture segmentation," IEEE T. Computational Imaging, vol. 2, no. 4, pp. 468-479, 2016. [.pdf](#)
- [12] T. Nakamura, K. Kiyono, H. Wendt, P. Abry, Y. Yamamoto, "Multiscale Analysis of Intensive Longitudinal Biomedical Signals and its Clinical Applications," Proc. IEEE, vol. 104, no. 2, pp. 242-261, 2016. [www](#)

- [13] S. Jaffard, C. Melot, R. Leonarduzzi, H. Wendt, P. Abry, S. G. Roux, M. E. Torres, “p-exponent and p-leaders, Part I: Negative pointwise regularity,” *Physica A*, vol. 448, pp. 300–318, 2016. [www](#) | [.pdf](#)
- [14] R. Leonarduzzi, H. Wendt, P. Abry, S. Jaffard, C. Melot, S. G. Roux, M. E. Torres, “p-exponent and p-leaders, Part II: Multifractal Analysis. Relations to Detrended Fluctuation Analysis,” *Physica A*, vol. 448, pp. 319–339, 2016. [www](#) | [.pdf](#)
- [15] H. Wendt, N. Dobigeon, J.-Y. Tourneret, M. Albinet, C. Goldstein, N. Karouche, “Detection and Correction of Glitches in a Multiplexed Multi-channel Data Stream - Application to the MADRAS Instrument,” *IEEE T. Geoscience and Remote Sensing*, vol. 54, no. 5, pp. 2803–2811, 2016. [www](#) | [.pdf](#)
- [16] F. Andersson, M.V. de Hoop, H. Wendt, “Multi-scale reverse-time-migration type imaging using the dyadic parabolic decomposition of phase space,” *SIAM J. on Imaging Sciences (SIIMS)*, vol. 8, no. 4, pp. 2383–2411, 2015. [.pdf](#)
- [17] S. Combexelle, H. Wendt, N. Dobigeon, J.-Y. Tourneret, S. McLaughlin, P. Abry, “Bayesian Estimation of the Multifractality Parameter for Image Texture Using a Whittle Approximation,” *IEEE Trans. Image Proc.*, vol. 24, no. 8, pp. 2540–2551, Aug. 2015. [.pdf](#)
- [18] P. Abry, S. G. Roux, H. Wendt, P. Messier, A. G. Klein, N. Tremblay, P. Borgnat, S. Jaffard, B. Vedel, J. Coddington, L. Daffner, “Multiscale Anisotropic Texture Analysis and Classification of Photographic Prints: Art scholarship meets image processing algorithms,” *IEEE Signal Proc. Mag.*, vol. 32, no. 4, pp. 18–27, July 2015. [.pdf](#)
- [19] F. Andersson, M. Carlsson, J.-Y. Tourneret, H. Wendt, “A new frequency estimation method for equally and unequally spaced data,” *IEEE Trans. Signal Proc.*, vol. 61, no. 21, pp. 5761–5774, Nov. 2014. [.pdf](#)
- [20] C.R. Johnson, P. Messier, W.A. Sethares, A.G. Klein, C. Brown, A.H. Do, P. Klausmeyer, P. Abry, S. Jaffard, H. Wendt, S. Roux, N. Pustelnik, N. van Noord, L. van der Maaten, E. Potsma, J. Coddington, L.A. Daffner, H. Murata, H. Wilhelm, S. Wood, M. Messier, “Pursuing automated classification of historic photographic papers from raking light photomicrographs,” *Journal of the American Institute for Conservation*, vol. 53, no. 3, pp. 159–170, 2014. [www](#) | [.pdf](#)
- [21] M.V. de Hoop, G. Uhlmann, A. Vasy, H. Wendt, “Multi-scale discrete approximations of Fourier integral operators associated with canonical transformations and caustics,” *SIAM Multiscale Model. Simul.*, vol. 11, no. 2, pp. 566–585, 2013. [.pdf](#)
- [22] P. Abry, S. Jaffard, H. Wendt “When Van Gogh meets Mandelbrot: Multifractal classification of painting’s texture,” *Signal Proces.*, vol. 93, no. 3, pp. 554–572, 2013. [.pdf](#)
- [23] F. Andersson, M.V. de Hoop, H. Wendt, “Multiscale discrete approximation of Fourier integral operators,” *SIAM Multiscale Model. Simul.*, vol 10, no. 1, pp. 111–145, 2012. [.pdf](#)
- [24] H. Wendt, S.G. Roux, P. Abry, S. Jaffard, “Wavelet leaders and bootstrap for multifractal analysis of images,” *Signal Proces.*, vol. 89, pp. 1100–1114, 2009. [.pdf](#)
- [25] P. Ciuciu, P. Abry, C. Rabrait H. Wendt, “Log Wavelet Leaders Cumulant based Multifractal Analysis of EVI fMRI time series: evidence of scaling in ongoing and evoked brain activity,” *IEEE J. of Selected Topics in Signal Proc.*, vol. 2, no. 6, pp. 929–943, 2009. [.pdf](#)
- [26] C. Baek, V. Pipiras, H. Wendt, P. Abry, “Second order properties of distribution tails and estimation of tail exponents in random difference equations,” *Extremes*, vol. 12, no. 4, pp. 361–400, 2009. [.pdf](#)

- [27] H. Wendt, P. Abry, S. Jaffard, “Bootstrap for empirical multifractal analysis,” *IEEE Signal Proc. Mag.*, vol. 24, no. 4, pp. 38–48, 2007. [.pdf](#)
- [28] H. Wendt, P. Abry, “Multifractality tests using bootstrapped wavelet leaders,” *IEEE Trans. Signal Proc.*, vol. 55, no. 10, pp. 4811–4820, 2007. [.pdf](#)

2 National Journals

- [29] H. Wendt, P. Abry, S.G. Roux, S. Jaffard, B. Vedel, “Analyse multifractale d’image: l’apport des coefficients dominants,” *Revue Traitement du Signal*, vol. 25, no. 4–5, 2009. [.pdf](#)

3 International Conferences with Selection Panels

- [30] K. Basinet, A. Klein, P. Abry, S. G. Roux, H. Wendt, P. Messier, “Performance of two multiscale texture algorithms in classifying silver gelatine paper via k-nearest neighbors,” *IEEE Int. Conf. Image Proces. (ICIP)*, Athens, Greece, Oct. 2018.
- [31] H. Wendt, D. Fagot, C. Fevotte “Jacobi Algorithm for Nonnegative Matrix Factorization with Transform Learning,” *European Signal Processing Conference (EUSIPCO)*, Rome (Italy), Sept. 2018.
- [32] D. La Rocca, P. Ciuciu, V. van Wassenhove, H. Wendt, P. Abry, R. Leonarduzzi, “Scale-free Functional Connectivity Analysis from Source Reconstructed MEG Data,” *European Signal Processing Conference (EUSIPCO)*, Rome (Italy), Sept. 2018.
- [33] R. Leonarduzzi, P. Abry, S. G. Roux, H. Wendt, S. Jaffard, S. Seuret, “Multifractal Characterization for Bivariate Data,” *European Signal Processing Conference (EUSIPCO)*, Rome (Italy), Sept. 2018.
- [34] H. Wendt, P. Abry, G. Didier, “Wavelet domain bootstrap for testing the equality of bivariate self-similarity exponents,” *IEEE Workshop Statistical Signal Proces. (SSP)*, Freiburg, Germany, June 2018. [.pdf](#)
- [35] P. Abry, H. Wendt, G. Didier, “Detecting and Estimating Multivariate Self-Similar Sources in High-Dimensional Noisy Mixtures,” *IEEE Workshop Statistical Signal Proces. (SSP)*, Freiburg, Germany, June 2018. [.pdf](#)
- [36] H. Wendt, R. Leonarduzzi, P. Abry, S. Roux, S. Jaffard, S. Seuret, “Assessing cross-dependencies using bivariate multifractal analysis,” *IEEE Int. Conf. Acoust., Speech, and Signal Proces. (ICASSP)*, Calgary (Canada), April 2018. [.pdf](#)
- [37] D. Fagot, H. Wendt, C. Fevotte, “Nonnegative matrix factorization with transform learning,” *IEEE Int. Conf. Acoust., Speech, and Signal Proces. (ICASSP)*, Calgary (Canada), April 2018. [.pdf](#)
- [38] H. Wendt, P. Ciuciu, P. Abry, “Spatially regularized wavelet leader scale-free analysis of fMRI Data,” *IEEE International Symposium on Biomedical Imaging (ISBI)*, Washington D.C. (USA), April 2018. [.pdf](#)
- [39] P. Ciuciu, H. Wendt, S. Combrexelle, P. Abry, “Spatially regularized multifractal analysis for fMRI Data,” *International IEEE EMBS Conference (EMBC)*, Jeju (South Korea), July 2017. [.pdf](#)
- [40] G. Valenza, H. Wendt, K. Kiyono, J. Hayano, E. Watanabe, Y. Yamamoto, P. Abry, R. Barbieri, “Multiscale Properties of Instantaneous Parasympathetic Activity in Severe Congestive Heart Failure: A Survivor vs Non-Survivor Study,” *International IEEE EMBS Conference (EMBC)*, Jeju (South Korea), July 2017. [.pdf](#)

- [41] M. Le Goff, J.-Y. Tourneret, H. Wendt, M. Ortner, M. Spigai, "Deep Learning for Cloud Detection," *International Conference on Pattern Recognition Systems (ICPRS)*, Madrid (Spain), July 2017. [.pdf](#)
- [42] S. Combrexelle, H. Wendt, G. Didier, P. Abry, "Multivariate Scale-free dynamics: Testing Fractal Connectivity," *IEEE Int. Conf. Acoust., Speech, and Signal Proces. (ICASSP)*, New Orleans (USA), March 2017. [.pdf](#)
- [43] R. Leonarduzzi, P. Abry, S. Jaffard, H. Wendt, L. Gournay, T. Kyriacopoulou, C. Martineau, C. Martinez, "P-Leader Multifractal Analysis for Text Type Identification," *IEEE Int. Conf. Acoust., Speech, and Signal Proces. (ICASSP)*, New Orleans (USA), March 2017. [.pdf](#)
- [44] J. Frecon, N. Pustelnik, N. Dobigeon, H. Wendt, P. Abry, "Bayesian-driven criterion to automatically select the regularization parameter in the l1-Potts model," *IEEE Int. Conf. Acoust., Speech, and Signal Proces. (ICASSP)*, New Orleans (USA), March 2017. [.pdf](#)
- [45] P. Abry, A.G. Klein, P. Messier, S. Roux, M.H. Ellis, W.A. Sethares, D. Picard, Y. Zhai, D.L. Neuhoff, H. Wendt, S. Jaffard, C.R. Johnson Jr., "Wave Paper Analysis through Texture Similarities," *IEEE Asilomar Conf. Signals, Systems and Computers*, Pacific Grove (USA), Nov. 2016. [.pdf](#)
- [46] R. Leonarduzzi, P. Abry, H. Wendt, K. Kiyono, Y. Yamamoto, E. Watanabe, J. Hayano, "Scattering Transform of Heart Rate Variability for the Prediction of Ischemic Stroke in Patients with Atrial Fibrillation," *Int. Workshop Biosignal Interpretation (BSI)*, Osaka, Japan, Nov. 2016. [.pdf](#)
- [47] S. Combrexelle, H. Wendt, Y. Altmann, J.-Y. Tourneret, S. McLaughlin, P. Abry, "Bayesian joint estimation of the multifractality parameter of image patches using Gamma Markov Random Field priors," *IEEE Int. Conf. Image Proces. (ICIP)*, Phoenix (USA), Sept. 2016. [.pdf](#)
- [48] S. G. Roux, P. Abry, B. Vedel, S. Jaffard, H. Wendt, "Hyperbolic wavelet leaders for anisotropic multifractal texture analysis," *IEEE Int. Conf. Image Proces. (ICIP)*, Phoenix (USA), Sept. 2016. [.pdf](#)
- [49] S. Combrexelle, H. Wendt, Y. Altmann, J.-Y. Tourneret, S. McLaughlin, P. Abry, "Bayesian estimation for the local assessment of the multifractality parameter of multivariate time series," *European Signal Processing Conference (EUSIPCO)*, Budapest (Hungary), Sept. 2016. [.pdf](#)
- [50] F. Andersson, M. Carlsson, H. Wendt, "On a fixed-point algorithm for structured low-rank approximation and estimation of half-life parameters," *European Signal Processing Conference (EUSIPCO)*, Budapest (Hungary), Sept. 2016. [.pdf](#)
- [51] J. Frecon, N. Pustelnik, H. Wendt, L. Condat, P. Abry, "Multifractal-based texture segmentation using variational procedure," *IEEE IVMSIP Workshop*, Bordeaux (France), July 2016. [.pdf](#)
- [52] M. Le Goff, J.-Y. Tourneret, H. Wendt, M. Ortner, M. Spigai, "Distributed Boosting for Cloud Detection," *IEEE Int. Geoscience Remote Sens. Symp. (IGARSS)*, Beijing (China), July 2016. [.pdf](#)
- [53] S. Combrexelle, H. Wendt, J.-Y. Tourneret, P. Abry, S. McLaughlin, "Bayesian Multifractal Analysis of Multi-temporal Images Using Smooth Priors," *IEEE Workshop Statistical Signal Proces. (SSP)*, Palma de Mallorca (Spain), June 2016. [.pdf](#)
- [54] R. Leonarduzzi, H. Touchette, H. Wendt, P. Abry, S. Jaffard, "Generalized Legendre Transform Multifractal Formalism for Nonconcave Spectrum Estimation," *IEEE Workshop Statistical Signal Proces. (SSP)*, Palma de Mallorca (Spain), June 2016. [.pdf](#)
- [55] S. Combrexelle, H. Wendt, J.-Y. Tourneret, Y. Altmann, S. McLaughlin, P. Abry, "A Bayesian Approach for the Multifractal Analysis of Spatio-Temporal Data," *Int. Conf. Systems, Signals and Image Proces. (IWSSIP)*, Bratislava (Slovakia), May 2016. [.pdf](#)

- [56] S. Combrexelle, H. Wendt, Y. Altmann, J.-Y. Tourneret, S. McLaughlin, P. Abry, "A Bayesian framework for the multifractal analysis of images using data augmentation and a Whittle approximation," *IEEE Int. Conf. Acoust., Speech and Signal Proces. (ICASSP)*, Shanghai (China), March 2016. [.pdf](#)
- [57] F. Andersson, M. Carlsson, J.Y. Tourneret, H. Wendt, "A Method for 3D Direction of Arrival Estimation for General Arrays Using Multiple Frequencies," *CAMSAP 15*, Cancun (Mexico), Dec. 2015. [.pdf](#)
- [58] S.G. Roux, N. Tremblay, P. Borgnat, P. Abry, H. Wendt, P. Messier, "Multiscale Anisotropic Texture Unsupervised Clustering for Photographic Paper," *IEEE Int. Workshop Information Forensics and Security (WIFS)*, Rome (Italy), Nov. 2015. [.pdf](#)
- [59] J. Frecon, N. Pustelnik, H. Wendt, P. Abry, "Multivariate optimization for multifractal-based texture segmentation," *IEEE Int. Conf. Image Proces. (ICIP)*, Quebec City (Canada), Sept. 2015. [.pdf](#)
- [60] S. Combrexelle, H. Wendt, J.-Y. Tourneret, P. Abry, S. McLaughlin, "Bayesian estimation of the multifractality parameter for images via a closed-form Whittle likelihood," *23rd European Signal Processing Conference (EUSIPCO)*, Nice (France), Aug. 2015. [.pdf](#)
- [61] G. Valenza, H. Wendt, K. Kiyono, J. Hayano, E. Watanabe, Y. Yamamoto, P. Abry, R. Barbieri, "Point-Process High-Resolution Representations of Heartbeat Dynamics for Multiscale Analysis: a CHF Survivor Prediction Study," *37th Annual International IEEE EMBS Conference (EMBC)*, Milano (Italy), Aug. 2015. [.pdf](#)
- [62] R. Leonarduzzi, J. Spilka, J. Frecon, H. Wendt, N. Pustelnik, S. Jaffard, P. Abry, M. Doret, "p-leader Multifractal Analysis and Sparse SVM for Intrapartum Fetal Acidosis Detection," *37th Annual International IEEE EMBS Conference (EMBC)*, Milano (Italy), Aug. 2015. [.pdf](#)
- [63] O. Chabiron, J.-Y. Tourneret, H. Wendt, F. Malgouyres, "Convolutional Trees for Fast Transform Learning," *Signal Processing with Adaptive Sparse Structured Representations Workshop (SPARS)*, Cambridge (UK), July 2015. [.pdf](#)
- [64] S. Combrexelle, H. Wendt, J.-Y. Tourneret, S. McLaughlin, P. Abry, "Hyperspectral image analysis using multifractal attributes," *IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, (JAP), June 2015. [.pdf](#)
- [65] S. Combrexelle, H. Wendt, P. Abry, N. Dobigeon, S. McLaughlin, J.-Y. Tourneret, "A Bayesian approach for the joint estimation of the multifractality parameter and integral scale based on the Whittle approximation," *IEEE Int. Conf. Acoust., Speech, and Signal Proc. ICASSP 15*, (AUS), April 2015. [.pdf](#)
- [66] R. Fontugne, P. Abry, K. Fukuda, P. Borgnat, J. Mazel, H. Wendt, D. Veitch, "Random Projection and Multiscale Wavelet Leader Based Anomaly Detection and Address Identification in Internet Traffic," *IEEE Int. Conf. Acoust., Speech, and Signal Proc. ICASSP 15*, (AUS), April 2015. [.pdf](#)
- [67] S. Roux, P. Abry, H. Wendt, S. Jaffard, "Hyperbolic Wavelet Transform for Historic Photographic Paper Classification Challenge," *IEEE Asilomar Conf. Signals, Systems and Computers*, Pacific Grove (USA), Nov. 2014. [.pdf](#)
- [68] R. Leonarduzzi, J. Spilka, H. Wendt, S. Jaffard, M. E. Torres, P. Abry, M. Doret, "p-leader based classification of first stage intrapartum fetal HRV," *VI Congreso Latinoamericano de Ingeniería Biomédica (CLAIB)*, Paraná, Entre Ríos, Argentina, Oct. 2014. [.pdf](#)
- [69] N. Pustelnik, P. Abry, H. Wendt, N. Dobigeon, "Inverse problem formulation for regularity estimation in images," *IEEE Int. Conf. Image Proc. (ICIP)*, Paris (France), Oct. 2014. [.pdf](#)

- [70] J. Frecon, N. Pustelnik, N. Dobigeon, H. Wendt, P. Abry, "Hybrid Bayesian Variational Scheme to Handle Parameter Selection in Total Variation Signal Denoising," *EUSIPCO 14*, Lisbon (Portugal), 2014. [.pdf](#)
- [71] H. Wendt, K. Kiyono, P. Abry, J. Hayano, E. Watanabe, Y. Yamamoto, "MultiScale Wavelet p-Leader based Heart Rate Variability Analysis for Survival Probability Assessment in CHF Patients," *36th Annual International IEEE EMBS Conference (EMBC)*, Chicago (USA), 2014. [.pdf](#)
- [72] R. Leonarduzzi, H. Wendt, S. Jaffard, S. G. Roux, M. E. Torres, P. Abry, "Extending multifractal analysis to negative regularity: p-exponents and p-leaders," *IEEE Int. Conf. Acoust., Speech, and Signal Proc. ICASSP 14*, Florence (Italy), 2014. [.pdf](#)
- [73] F. Andersson, M. Carlsson, J.Y. Tournet, H. Wendt, "On an Iterative Method for Direction of Arrival Estimation using Multiple Frequencies," *CAMSAP 13*, Saint-Martin (France), 2013. [.pdf](#)
- [74] F. Andersson, M. Carlsson, J.Y. Tournet, H. Wendt, "Frequency Estimation Based on Hankel Matrices and the Alternating Direction Method of Multipliers," *EUSIPCO 13*, Marrakech (Maroc), 2013. [.pdf](#)
- [75] H. Wendt, N. Dobigeon, J.Y. Tournet, P. Abry, "Bayesian estimation for the multifractality parameter," *IEEE Int. Conf. Acoust., Speech, and Signal Proc. ICASSP 13*, Vancouver (Canada), 2013. [.pdf](#)
- [76] N. Pustelnik, H. Wendt, P. Abry, "Local regularity for texture segmentation: Combining wavelet leaders and proximal minimization," *IEEE Int. Conf. Acoust., Speech, and Signal Proc. ICASSP 13*, Vancouver (Canada), 2013. [.pdf](#)
- [77] P. Messier, R. Johnson, H. Wilhelm, W.A. Sethares, A.G. Klein, P. Abry, S. Jaffard, H. Wendt, S. Roux, N. Pustelnik, N. van Noord, L. van der Maaten, E. Postma, "Automated Surface Texture Classification of Inkjet and Photographic Media," *NIP & Digital Fabrication Conference*, Seattle (USA), 2013. [.pdf](#)
- [78] H. Wendt, S. Jaffard, P. Abry, "Multifractal Analysis of Self-Similar Processes," *IEEE Workshop Statistical Signal Proc. (SSP)*, Ann Arbor (USA), 2012. [.pdf](#)
- [79] P. Abry, S. Jaffard, H. Wendt, "Bruegel's drawings under the multifractal microscope," *IEEE Int. Conf. Acoust., Speech, and Signal Proc. ICASSP 12*, Kyoto (Japan), 2012. [.pdf](#)
- [80] H. Wendt, M.V. de Hoop, G. Uhlmann, A. Vasy, "Universal multi-scale computations of Fourier integral operators for coherent imaging in caustics," *Society of Exploration Geophysicists Annual Meeting (SEG)*, San Antonio, USA, Oct. 2011. [.pdf](#)
- [81] P. Abry, H. Wendt, S. Jaffard, H. Helgason, P. Goncalves, E. Pereira, C. Gharib, P. Gaucherand, M. Doret, "Methodology for multifractal analysis of heart rate variability: from LF/HF ratio to wavelet leaders," *32nd Annual International IEEE EMBS Conference (EMBC)*, Buenos Aires, Argentina, Sept. 2010. [.pdf](#)
- [82] H. Wendt, M.V. de Hoop, F. Andersson, A. Duchkov, "Multiscale structured imaging using wave packets and prolate spheroidal wave functions," *Society of Exploration Geophysicists Annual Meeting (SEG)*, Denver, USA, Oct. 2010. [.pdf](#)
- [83] A. Duchkov, F. Andersson, H. Wendt, "Sparse wave-packet representations and seismic imaging," *Society of Exploration Geophysicists Annual Meeting (SEG)*, Denver, USA, Oct. 2010. [.pdf](#)
- [84] H. Wendt, P. Abry, S. Jaffard, H. Ji, Z. Shen, "Wavelet Leader Multifractal Analysis for Texture Classification," *IEEE Int. Conf. Image Proc. (ICIP)*, Cairo (Egypt), 2009. [.pdf](#)

- [85] H. Wendt, M.V. de Hoop, F. Andersson, "Multiscale propagation and imaging with wave packets," *Society of Exploration Geophysicists Annual Meeting (SEG)*, Houston (US), 2009. [.pdf](#)
- [86] H. Wendt, A. Scherrer, P. Abry, S. Achard, "Testing fractal connectivity in multivariate long memory processes," *IEEE Int. Conf. Acoust., Speech, and Signal Proc. ICASSP 09*, Taipei (Taiwan), 2009. [.pdf](#)
- [87] H. Wendt, P. Abry, "Bootstrap tests for the time constancy of multifractal attributes," *IEEE Int. Conf. on Acoust., Speech and Signal Proc. ICASSP 08*, Las Vegas (US), 2008. [.pdf](#)
- [88] H. Wendt, S. Roux, P. Abry, "Impact of data quantization on empirical multifractal analysis," *IEEE Int. Conf. on Acoust., Speech and Signal Proc. ICASSP 07*, Honolulu (US), 2007. [.pdf](#)
- [89] H. Wendt, P. Abry, "Time-scale block bootstrap tests for non gaussian finite variance self-similar processes with stationary increments," *IEEE Workshop on Statist. Signal Proc. SSP 07*, Madison (US), 2007. [.pdf](#)
- [90] P. Ciuciu, P. Abry, C. Rabrait, H. Wendt, A. Roche, "Leader-based multifractal analysis for evi fmri time series: Ongoing versus task-related brain activity," *IEEE Int. Symp. on Biomedical Imaging ISBI 07*, Washington DC (US), 2007. [.pdf](#)
- [91] H. Wendt, S. Roux, P. Abry, "Bootstrap for log wavelet leaders cumulant based multifractal analysis," *EUSIPCO 06*, Firenze (I), 2006. [.pdf](#)
- [92] H. Wendt, P. Abry, "Bootstrap for multifractal analysis," *IEEE Int. Conf. on Acoust., Speech and Signal Proc. ICASSP 06*, Toulouse (F), 2006. [.pdf](#)

4 National Conferences with Selection Panels

- [93] J. Frecon, N. Pustelnik, N. Dobigeon, H. Wendt, P. Abry, "Sélection du paramètre de régularisation dans le problème l2-Potts," *Coll. Traitement du Signal et des Images (GRETSI)*, Juan-Les-Pins (F), Sept. 2017. [.pdf](#)
- [94] S. Combrexelle, H. Wendt, J.-Y. Tourneret, N. Dobigeon, S. McLaughlin, P. Abry, "Estimation bayésienne locale du paramètre de multifractalité à l'aide d'un algorithme de Monte Carlo Hamiltonien," *Coll. Sur le Traitement du Signal et des Images GRETSI 15*, Lyon (F), 2015. [.pdf](#)
- [95] R. Leonarduzzi, H. Wendt, S. Jaffard, P. Abry, "Pitfall in Multifractal Analysis of Negative Regularity," *Coll. Sur le Traitement du Signal et des Images GRETSI 15*, Lyon (F), 2015. [.pdf](#)
- [96] J. Frecon, N. Pustelnik, H. Wendt, P. Abry, "Variation totale multivariée pour la détection de changement du spectre multifractal," *Coll. Sur le Traitement du Signal et des Images GRETSI 15*, Lyon (F), 2015. [.pdf](#)
- [97] N. Tremblay, S.G. Roux, P. Borgnat, P. Abry H. Wendt, P. Messier, "Texture classification of photographic papers: improving spectral clustering using filterbanks on graphs," *Coll. Sur le Traitement du Signal et des Images GRETSI 15*, Lyon (F), 2015. [.pdf](#)
- [98] N. Pustelnik, H. Wendt, P. Abry, "Régularité locale pour l'analyse de texture : le mariage des coefficients dominants et de la minimisation proximale," *Coll. Sur le Traitement du Signal et des Images GRETSI 13*, Brest (F), 2013. [.pdf](#)
- [99] H. Wendt, N. Dobigeon, J.Y. Tourneret, P. Abry, "Estimation bayésienne du paramètre de multifractalité," *Coll. Sur le Traitement du Signal et des Images GRETSI 13*, Brest (F), 2013. [.pdf](#)

- [100] H. Wendt, P. Abry, S. Jaffard, “Analyse multifractale d’image: L’apport des coefficients dominants,” *Coll. Sur le Traitement du Signal et des Images GRETSI 07*, Troyes (F), 2007. [.pdf](#)
- [101] P. Abry, V. Pipiras, H. Wendt, “Extreme values, heavy tails and linearization effect: A contribution to empirical multifractal analysis,” *Coll. Sur le Traitement du Signal et des Images GRETSI 07*, Troyes (F), 2007. [.pdf](#)
- [102] H. Wendt, P. Flandrin, P. Abry, “Régressions par machines à vecteurs supports pour la prédiction de séries chaotiques,” *Coll. Sur le Traitement du Signal et des Images GRETSI 05*, Louvain-la-Neuve (B), 2005. [.pdf](#)

5 Book Chapters

- [103] P. Abry, S. Jaffard, R. Leonarduzzi, C. Melot, H. Wendt, “New exponents for pointwise singularities classification,” in *Proc. Fractals and Related Fields III*, 19-26 September 2015, Porquerolles, France, S. Seuret and J. Barral, Eds., 2017. *In press*. [.pdf](#)
- [104] S. Jaffard, P. Abry, C. Melot, R. Leonarduzzi, H. Wendt, “Multifractal analysis based on p-exponents and lacunarity exponents,” in *Fractal Geometry and Stochastics V*, C. Bandt et al., Eds., *Series Progress in Probability*, Vol. 70, pp. 279–313, Birkhäuser, 2015. [.pdf](#)
- [105] P. Abry, S. Jaffard, H. Wendt, “A bridge between geometric measure theory and signal processing: Multifractal analysis,” in *Operator-Related Function Theory and Time-Frequency Analysis*, The Abel Symposium 2012, K. Gröchenig, Y. Lyubarskii and K. Seip, Eds., *Springer Series Abel Symposia*, Vol. 9, pp. 1–56, Springer, 2015. [.pdf](#)
- [106] S. Jaffard, P. Abry, H. Wendt, “Irregularities and Scaling in Signal and Image Processing: Multifractal Analysis,” in *Benoit Mandelbrot: A Life in Many Dimensions*, M. Frame and N. Cohen, Ed., pp. 31–116, World scientific publishing, Singapore, 2015. [www / .pdf](#)
- [107] B. Vedel, H. Wendt, P. Abry, S. Jaffard, “On the impact of the number of vanishing moments on the dependence structures of compound Poisson motion and fractional Brownian motion in multifractal time,” in *Dependence in Probability and Statistics*, P. Doukhan, G. Lang, D. Surgailis, Eds., *Lecture Notes in Statistics*, Vol. 200, pp. 71–101, Springer, 2010. [.pdf](#)
- [108] S. Jaffard, P. Abry, S.G. Roux, B. Vedel, H. Wendt, “The contribution of wavelets in multifractal analysis,” in *Wavelet Methods in Mathematical Analysis and Engineering*, A. Damlamian, S. Jaffard, Eds., *Series in contemporary applied mathematics*, vol. 14, pp. 55–98, World scientific publishing, 2010. [.pdf](#)
- [109] P. Abry, S. Jaffard, S. Roux, B. Vedel, H. Wendt, “Wavelet decomposition of measures: Application to multifractal analysis of images,” *Proc. NATO-ASI Conf. on Unexploded Ordnance Detection and Mitigation*, J. Byrnes, Ed., pp. 1–20, Springer, 2009. [.pdf](#)

6 Patents

- [110] J.-Y. Tourneret, H. Wendt, N. Dobigeon, “Procédé de détection et/ou de correction automatique d’erreurs dans un flux de données multiplexées : Method for automatic detection and/or correction of errors in multiplexed data stream,” French Patent Nr. 13 55645, filed 17/06/2013, published 19/12/2014, delivered 17/02/2017. [www / .pdf](#)

7 Technical Reports

- [111] J.-Y. Tourneret and H. Wendt, “Techniques d’optimisation des communications sécurisées : Lot 2 - Méthodes de classification supervisées et non supervisées,” CNES, Toulouse, France, Industrial Rep., Aug. 2017.
- [112] H. Wendt, N. Dobigeon, J.-Y. Tourneret, M. Albinet, C. Goldstein, N. Karouche, “Detection and Correction of Glitches in a Multiplexed Multi-channel Data Stream - Application to the MADRAS Instrument - Complementary results and supporting materials,” IRIT-ENSEEIH, Toulouse, France, 24 pages, Oct. 2015. [.pdf](#)
- [113] J.-Y. Tourneret and H. Wendt, “Data mining bayésien appliqué au contexte des satcom : état de l’art et analyse de scénarios d’usage,” CNES, Toulouse, France, Industrial Rep., Jan. 2015.
- [114] H. Wendt, N. Dobigeon, J.-Y. Tourneret, “Complementary algorithms for detection and correction of spurious strobes in MADRAS instrument data,” CNES/CLS, Toulouse, France, Industrial Rep., Sept. 2012.
- [115] H. Wendt, N. Dobigeon, J.-Y. Tourneret, “Algorithm for detection and correction of spurious strobes in MADRAS instrument data,” CNES/CLS, Toulouse, France, Industrial Rep., June. 2012.
- [116] F. Andersson, M.V. de Hoop, H. Wendt, “Multi-scale reverse-time-migration based inverse scattering using the dyadic parabolic decomposition of phase space,” *Proc. GMIG Project Review*, pp. 49–68, Purdue University, West Lafayette (USA), 2012. [.pdf](#)
- [117] H. Wendt, M.V. de Hoop, G. Uhlmann, A. Vasy, “Fourier integral operator canonical computation with wave packets,” *Proc. GMIG Project Review*, pp. 113–130, Purdue University, West Lafayette (USA), 2011. [.pdf](#)
- [118] H. Wendt, M.V. de Hoop, F. Andersson, “Multi-scale discrete approximation of Fourier integral operators,” *Proc. GMIG Project Review*, pp. 93–134, Purdue University, West Lafayette (USA), 2010. [.pdf](#)
- [119] H. Wendt, F. Andersson, M.V. de Hoop, “Discrete Generalized Radon Transform compression using wave packets,” *Proc. GMIG Project Review*, pp. 205–212, Purdue University, West Lafayette (USA), 2009. [.pdf](#)

8 Theses

- [120] H. Wendt, “Contributions of Wavelet Leaders and Bootstrap to Multifractal Analysis: Images, Estimation Performance, Dependence Structure and Vanishing Moments. Confidence Intervals and Hypothesis Tests.” *Ph.D thesis, Laboratoire de Physique, Ecole Normale Supérieure de Lyon*, Lyon (F), 2008. [.pdf](#)
- [121] H. Wendt, “Support Vector Machines for Regression Estimation and their Application to Chaotic Time Series Prediction,” *Masters thesis, Institute of Communications and Radio Frequency Engineering, Technische Universität Wien*, Wien (A), 2005. [.pdf](#)