

# Publication List

January 13, 2022

## 1 Peer-reviewed journal articles

- [1] G. Daval-Fr  rot, B. Massire, A. Mailhe, M. Nadar, A. Vignaud, and **P. Ciuciu**, “Iterative  $\Delta B_0$  field map estimation for off-resonance correction in non-Cartesian susceptibility weighted imaging,” *in revision to Magnetic Resonance in Medicine*, CEA Saclay, Inria Parietal and Siemens-Healthineers France & USA, Saclay, France, Jan. 2022.
- [2] Chaithya G R, P. Weiss, A. Massire, A. Vignaud, and **P. Ciuciu**, “Optimizing full 3D SPARKLING trajectories for high-resolution T2\*-weighted Magnetic Resonance imaging,” *in revision to IEEE Transactions on Medical Imaging*, CEA Saclay & Inria Parietal, Saclay, France, Jan. 2022.
- [3] Z. Ramzi, Chaithya G R, J.-L. Starck, and **P. Ciuciu**, “Density-Compensated Unrolled Networks for 2D and 3D non-Cartesian MRI Reconstruction,” *accepted to IEEE Transactions on Medical Imaging*, CEA Saclay & Inria Parietal, Saclay, France, Jan. 2022.
- [4] Z. Ramzi, K. Michalewicz, J.-L. Starck, T. Moreau, and **P. Ciuciu**, “Wavelets in the Deep Learning Era,” *submitted to Journal of Mathematical Imaging and Vision*, CEA Saclay CosmoStat, NeuroSpin & Inria Parietal, Saclay, France, July 2021.
- [5] H. Cherkaoui, T. Moreau, A. Halimi, C. Leroy, and **P. Ciuciu**, “Multivariate semi-blind deconvolution of fMRI time series,” *NeuroImage*, vol. 241, no. 118418, Nov. 2021.
- [6] M. Muckley, B. Riemenschneider, A. Radmanesh, S. Kim, G. Jeong, J. Ko, Y. Jun, H. Shin, D. Hwang, M. Mostapha, S. Arberet, Z. Nickel, D. Ramzi, **P. Ciuciu**, J.-L. Starck, J. Teuwen, D. Karkalousos, C. Zhang, Z. Sriram, A. Huang, N. Yakubova, Y.W. Lui, and F. Knoll, “Results of the 2020 fastMRI Challenge for Machine Learning MR Image Reconstruction,” *IEEE Transactions on Medical Imaging*, vol. 40, no. 9, pp. 2306–2317, Sep. 2021.
- [7] M. Jacob, L. El Gueddari, J.-M Lin, G. Navarro, A. Jannaud, P. Bayle-Guillemaud, **P. Ciuciu**, and Z. Saghi, “Gradient-based and wavelet-based compressed sensing approaches for highly undersampled tomographic datasets,” *Ultramicroscopy*, vol. 225, no. 113289, Apr. 2021.

- [8] L. El Gueddari, Chaithya G R, E. Chouzenoux, and **P. Ciuciu**, “Calibration-less multi-coil compressed sensing Magnetic Resonance Image reconstruction based on OSCAR regularization,” *Journal of Imaging*, vol. 7, no. 3, pp. 58–77, Mar. 2021, Special issue on *Inverse problems and Imaging*.
- [9] D. La Rocca, H. Wendt, V. van Wassenhove, **P. Ciuciu**, and P. Abry, “Fractal connectivity: Revisiting functional connectivity for infraslow scale-free brain dynamics using complex wavelets,” *Frontiers in Physiology*, vol. 11, no. Article 578537, Jan. 2021.
- [10] S. Farrens, A. Grigis, , Z. El Gueddari, L. Ramzi, Chaithya G R, S. Starck, B. Sarthou, H. Cherkaoui, **P. Ciuciu**, and J.-L. Starck, “PySAP: Python Sparse Data Analysis Package for multidisciplinary image processing,” *Astronomy and Computing*, vol. 32, no. 100402, July 2020.
- [11] C. Lazarus, P. Weiss, , L. El Gueddari, F. Mauconduit, A. Massire, M. Ripart, A. Vignaud, and **P. Ciuciu**, “3D variable-density SPARKLING trajectories for high-resolution  $T_2^*$ -weighted Magnetic Resonance Imaging,” *NMR in Biomedicine*, vol. 33, no. e4349, pp. 1–12, 2020.
- [12] Z. Ramzi, **P. Ciuciu**, and J.-L. Starck, “Benchmarking MRI reconstruction neural networks on large public datasets,” Applied Sciences, *Special issue on Signal Processing and Machine Learning for Biomedical Data*, vol. 10, no. 5, pp. 1816, Feb. 2020.
- [13] D. La Rocca, **P. Ciuciu**, D. Engemann, and V. van Wassenhove, “Emergence of  $\beta$  and  $\gamma$  networks following multisensory training,” *Neuroimage*, vol. 206, pp. Article 116313, Feb, 1 2020.
- [14] C. Lazarus, P. Weiss, N. Chauffert, F. Mauconduit, L. El Gueddari, C. Destrieux, I. Zemmoura, A. Vignaud, and **P. Ciuciu**, “SPARKLING: variable-density k-space filling curves for accelerated  $T_2^*$ -weighted MRI,” *Magnetic Resonance in Medicine*, vol. 81, no. 6, pp. 3643–3661, June 2019.
- [15] Patryk Filipiak, Rutger Fick, Mathieu Petiet, Alexandra Santin, Anne-Charlotte Philippe, Stéphane Lehericy, **P. Ciuciu**, Rachid Deriche, and Demian Wassermann, “Reducing the number of samples in spatio-temporal dMRI acquisition design,” *Magnetic Resonance in Medicine*, vol. 81, no. 5, pp. 3218–3233, May 2019.
- [16] A. de Pierrefeu, T. Löfstedt, C. Laidi, F. Hadj-Selem, J. Bourgin, T. Hajek, F. Spaniel, M. Kolenic, **P. Ciuciu**, N. Hamdani, M. Leboyer, T. Fovet, R. Jardri, J. Houenou, and E. Duchesnay, “Identifying a neuroanatomical signature of schizophrenia, reproducible across sites and stages, using machine-learning with structured sparsity,” *Acta Psychiatrica Scandinavica*, vol. 138, no. 6, pp. 571–580, Dec. 2018.
- [17] D. La Rocca, N. Zilber, P. Abry, V. van Wassenhove, and **P. Ciuciu**, “Self-similarity and multifractality in human brain activity: a wavelet-based analysis of scale-free brain dynamics,” *Journal of Neuroscience Methods*, vol. 309, pp. 175–187, Nov. 2018.
- [18] C. Lazarus, P. Weiss, A. Vignaud, and **P. Ciuciu**, “An empirical study of the maximum degree of acceleration in Compressed Sensing MRI for  $T_2^*$ -weighted imaging,” *Magnetic Resonance Imaging*, vol. 53, pp. 112–122, Nov. 2018.

- [19] A. de Pierrefeu, T. Fovet, F. Hadj-Selim, T. Löfstedt, **P. Ciuciu**, S. Lefebvre, P. Thomas, R. Lopes, R. Jardri, and E. Duchesnay, “Prediction of activation patterns preceding hallucinations in patients with schizophrenia using machine learning with structured sparsity,” *Human Brain Mapping*, vol. 39, no. 4, pp. 1777–1788, 2018.
- [20] A. de Pierrefeu, T. Löfstedt, F. Hadj-Selim, M. Dubois, **P. Ciuciu**, V. Frouin, and E. Duchesnay, “Structured sparse Principal Component Analysis with the TV-Elastic net penalty,” *IEEE Transactions on Medical Imaging*, vol. 37, no. 2, pp. 396–407, 2018.
- [21] Nicolas Chauffert, **P. Ciuciu**, Philippe, Jonas Kahn, and Pierre Weiss, “A projection method on measures sets,” *Constructive Approximation*, vol. 45, no. 1, pp. 83–111, 2017.
- [22] M. Albughdadi, L. Chaari, J.-Y. Tournieret, F. Forbes, and **P. Ciuciu**, “A Bayesian non-parametric hidden Markov model for hemodynamic brain parcellation,” *Signal Processing*, pp. 132–146, 2017.
- [23] N. Chauffert, **P. Ciuciu**, J. Kahn, and P. Weiss, “A projection method on measures sets,” *Constructive Approximation*, vol. 45, no. 1, pp. 83–111, Feb. 2017.
- [24] C. Boyer, N. Chauffert, **P. Ciuciu**, J. Kahn, and P. Weiss, “On the generation of sampling schemes for Magnetic Resonance Imaging,” *SIAM Journal on Imaging Sciences*, vol. 9, no. 4, pp. 2039–2072, 2016.
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- [27] L. Chaari, **P. Ciuciu**, S. Mériaux, and J.-C. Pesquet, “Spatio-temporal wavelet regularization for parallel MRI reconstruction: application to functional MRI,” *MAGMA*, vol. 27, no. 6, pp. 509–529, Dec. 2014.
- [28] N. Chauffert, **P. Ciuciu**, J. Kahn, and P. Weiss, “Variable density sampling with continuous trajectories. Application to MRI,” *SIAM Journal on Imaging Sciences*, vol. 7, no. 4, pp. 1962–1992, Nov. 2014.
- [29] A. Florescu, E. Chouzenoux, J.-C. Pesquet, **P. Ciuciu**, and S. Ciochina, “A majorize-minimize memory gradient method for complex-valued inverse problems,” *Signal Processing*, vol. 103, pp. 285–295, Oct. 2014.
- [30] **P. Ciuciu**, P. Abry, and B.J. He, “Interplay between scale-free dynamics and functional connectivity in intrinsic fMRI networks,” *Neuroimage*, vol. 95, pp. 248–263, July 2014.

- [31] N. Zilber, **P. Ciuciu**, A. Gramfort, and V. van Wassenhove, “Supramodal plasticity optimizes perceptual learning,” *Neuroimage*, vol. 93, no. Part 1, pp. 32–46, June 2014.
- [32] T. Vincent, S. Badillo, L. Chaari, C. Bakhous, F. Forbes, and **P. Ciuciu**, “Flexible multivariate hemodynamics fMRI data analyses and simulations with PyHRF,” *Frontiers in Neurosciences*, vol. 8, Article 67, pp. 1–15, Apr. 2014.
- [33] S. Badillo, T. Vincent, and **P. Ciuciu**, “Group-level impacts of within- and between-subject hemodynamic variability in fMRI,” *Neuroimage*, vol. 82, pp. 433–448, 15 Nov. 2013.
- [34] L. Chaari, T. Vincent, F. Forbes, M. Dojat, and **P. Ciuciu**, “Fast joint detection-estimation of evoked brain activity in event-related fMRI using a variational approach,” *IEEE Trans. Med. Imag.*, vol. 32, no. 5, pp. 821–837, May 2013.
- [35] N. Zilber, **P. Ciuciu**, A. Gramfort, and V. van Wassenhove, “Supramodal processing in visual learning and plasticity,” *Multisensory Research*, vol. 26, pp. 113–114, 2013.
- [36] **P. Ciuciu**, G. Varoquaux, P. Abry, S. Sadaghiani, and A. Kleinschmidt, “Scale-Free and Multifractal Time Dynamics of fMRI Signals during Rest and Task,” *Frontiers in physiology*, vol. 3, no. Article 186, pp. 1–18, June 2012.
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## 2 Scientific mediation articles (since 2005)

- [1] C. Ferrand and **P. Ciuciu**, “La recherche en astrophysique façonne les algorithmes d’imagerie de demain,” *Dr Imago*, vol. <https://docteurimago.fr>, pp. 1–4, July 2021.
- [2] **P. Ciuciu**, “When the brain meets the stars: Knowledge made visible to the naked eye,” *Contact Magazine*, vol. XX, pp. 46–47, Mar. 2021.
- [3] **P. Ciuciu** and J.-L. Starck, “De la tête aux étoiles,” *Les voies de la Recherche – Clefs CEA*, vol. 70, pp. 46–47, Mar. 2020.
- [4] **P. Ciuciu** and B. Thirion, “Échantillonnage comprimé pour temps d’acquisition réduit,” *Les Défis du CEA*, , no. 225, pp. 2–3, Mar. 2018.
- [5] **P. Ciuciu** and B. Thirion, “Comprendre le cerveau par l’image: L’imagerie par résonance magnétique fonctionnelle sensible au débit sanguin,” *Clefs CEA*, , no. 56, pp. 38–42, Dec. 2007.
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## 3 Manuscripts in preparation (2020)

## 4 Abandoned manuscripts

- [1] D. La Rocca, **P. Ciuciu**, P. Abry, and V. van Wassenhove, “Learning-induced modulation of multifractal brain dynamics during visual motion discrimination,” submitted to *The Journal of Neuroscience*, CEA/NeuroSpin, INRIA Saclay Parietal & INSERM UNICOG U992, Saclay, France, Mar. 2019.

- [2] S. Bougacha, R. Phlypo, B. Thirion, **P. Ciuciu**, and G. Varoquaux, “On the geometry of functional connectomes: how to compute group-level statistics,” in revision to *Neuroimage*, CEA NeuroSpin, Gif-sur-Yvette, France, Jan. 2018.
- [3] **P. Ciuciu**, S. Bougacha, F. Boumezbeur, S. Desmidt, C. Ginisty, L. Laurier, J.-R. Deverre, L. Hertz-Pannier, N. Tardy, M. Pueyo, and K. Bernard, “S 47445, a positive allosteric modulator of ampa receptors, improves functional connectivity of brain networks in elderly healthy volunteers during a working memory task,” submitted to *European J. Neuropsychopharmacology*, CEA/NeuroSpin & IRIS Servier, Saclay, France, July 2017.
- [4] A. Frau-Pascual, S. Bougacha, Th. Perret, F. Forbes, and **P. Ciuciu**, “Functional ASL and BOLD fMRI group analysis: a comparison of different methodologies,” submitted to *Neuroimage*, CEA/NeuroSpin & INRIA Saclay Parietal, Saclay, France, July 2017.
- [5] F. Frau-Pascual, A. Forbes, Th. Perret, and **P. Ciuciu**, “Classical vs Bayesian analysis of functional ASL data: A model comparison approach,” submitted to *IEEE Transactions on Medical Imaging*, CEA/NeuroSpin & INRIA Saclay Parietal, Saclay, France, June 2017.
- [6] L. Chaari, S. Badillo, Th. Vincent, G. Dehaene-Lambertz, F. Forbes, and **P. Ciuciu**, “Subject-level joint parcellation-detection-estimation in fMRI,” submitted to *IEEE Trans. Med. Imag.*, IRIT Toulouse & CEA/NeuroSpin & INRIA Saclay and INRIA Grenoble, Jan. 2016.

## 5 Book chapters (since 2013)

- [1] **P. Ciuciu**, F. Forbes, T. Vincent, and L. Chaari, “Joint detection-estimation in functional MRI,” in *Regularization and Bayesian Methods for Inverse Problems in Signal and Image Processing*, Jean-François Giovannelli and Jérôme Idier, Eds., pp. 169–199. ISTE-Wiley, Feb. 2015.
- [2] J.-B. Poline, **P. Ciuciu**, A. Roche, and B. Thirion, “Intra and inter subject analyses of brain functional Magnetic Resonance Images (fMRI),” in *Handbook of Biomedical Imaging*, Nikos Paragios, James Duncan, and Nicholas Ayache, Eds. Springer US, 2015.
- [3] **P. Ciuciu**, F. Forbes, T. Vincent, and L. Chaari, “Détection-estimation conjointe en IRM fonctionnelle,” in *Méthodes d’inversion appliquées au traitement du signal et de l’image*, J.-F. Giovannelli and J. Idier, Eds. Hermes Science Publishing, Sep. 2013, To appear.
- [4] **P. Ciuciu**, *Méthodes markoviennes en estimation spectrale non paramétrique. Applications en imagerie radar Doppler*, Éditions universitaires européennes, July 2013, ISBN 978-613-1-56588-5.

## 6 Communications in peer-reviewed international conferences (since 1999)

- [1] Chaithya G R, Z. Ramzi, and **P. Ciuciu**, “Hybrid learning of Non-Cartesian k-space trajectory and MR image reconstruction networks,” in *19th International Symposium on Biomedical Imaging*, Kolkata, India, Mar. 2022.
- [2] G R Chaithya Pooja, Kumari, Z. Ramzi, and **P. Ciuciu**, “MC-PDNet: Deep Unrolled Neural Network for Multi-contrast MR Image Reconstruction from Undersampled k-space data,” in *19th International Symposium on Biomedical Imaging*, Kolkata, India, Mar. 2022.
- [3] Z. Ramzi, F. Mannel, S. Bai, J.-L. Starck, , **P. Ciuciu**, and T. Moreau, “SHINE: SHaring the INverse Estimate from the forward pass for bi-level optimization and implicit models,” in *International Conference on Learning Representations (ICLR)*, Jan. 2022.
- [4] Chaithya G R, Z. Ramzi, and **P. Ciuciu**, “Learning the sampling density in 2D SPARKLING MRI acquisition for optimized image reconstruction,” in *29th European Signal Processing Conference (EUSIPCO)*, Dublin, Ireland, Sep. 2021, pp. 960–964.
- [5] Z. Ramzi, **P. Ciuciu**, and J.-L. Starck, “Density Compensated Unrolled Networks for Non-Cartesian MRI Reconstruction,” in *18th International Symposium on Biomedical Imaging*, Nice, France, Apr. 2021, pp. 1443–1447.
- [6] Zaccharie Ramzi, Benjamin Remy, Francois Lanusse, Jean-Luc Starck, and **P. Ciuciu**, “Denoising score-matching for uncertainty quantification in inverse problems,” in *NeurIPS workshop on Deep Learning for Inverse Problems*, Virtual event, Dec. 2020, pp. 1–8.
- [7] Z. Ramzi, J.-L. Starck, T. Moreau, and **P. Ciuciu**, “Wavelets in the deep learning era,” in *28th European Signal Processing Conference (EUSIPCO)*, Amsterdam, Netherlands (virtual), Jan. 2021, pp. 1417–1421, Paper id 1806.
- [8] J.-M. Lin, M. Jacob, Z. Saghi, **P. Ciuciu**, and J.-L. Starck, “PySAP-ComSET: an accelerated python package for compressed sensing electron tomography (CS-ET) reconstruction,” in *the 8th International Workshop on OpenCL, SYSCL, Vulkan and SPIR-V*, Munich, Germany, Apr. 2020.
- [9] Z. Ramzi, **P. Ciuciu**, and J.-L. Starck, “Benchmarking deep nets MRI reconstruction models on the FastMRI publicly available dataset,” in *17th International Symposium on Biomedical Imaging*, Iowa City, IO, USA (virtual), Apr. 2020, pp. 1441–1445.
- [10] H. Cherkaoui, T. Perret, A. Halimi, and **P. Ciuciu**, “fMRI BOLD signal decomposition using a multivariate low-rank model,” in *27th European Signal Processing Conference (EUSIPCO)*, La Corugna, Spain, Sep. 2019, pp. 1–5.



- [11] L. El Gueddari, E. Chouzenoux, J.-C. Pesquet, and **P. Ciuciu**, “Online MR image reconstruction for compressed sensing acquisition in  $T_2^*$  imaging,” in *Wavelets and Sparsity XVIII*. International Society for Optics and Photonics, Aug. 2019, vol. 11138, pp. 1113819–1–1113819–15.
- [12] L. Jacob, M. El Gueddari, G. Navarro, M.-C. Cyrille, P. Bayle-Guillemaud, **P. Ciuciu**, and Z. Saghi, “Statistical machine learning and compressed sensing approaches for analytical electron tomography - application to phase change materials,” in *Microsc. Microanal.*, Microscopy Society of America 2019, Ed., Aug. 2019, vol. 25 (Suppl. 2), pp. 156–157.
- [13] V. van Wassenhove, D. La Rocca, D. Engelmann, and **P. Ciuciu**, “Temporal attention vs. comodulation in multisensory causal inference,” in *Proceedings of the 23rd International Congress on Acoustics*, Aachen, Germany, Sep. 2019, pp. 1–8.
- [14] Z. Ramzi, **P. Ciuciu**, and J.-L. Starck, “Benchmarking proximal methods acceleration enhancements for CS-acquired MR image analysis reconstruction,” in *(SPARS)*, Toulouse, France, July 2019.
- [15] H. Cherkaoui, T. Perret, A. Halimi, and **P. Ciuciu**, “Sparsity-based blind deconvolution of neural activation signal in fMRI,” in *44th Proceedings of the International Conference on Acoustic, Speech and Signal Processing*, Brighton, UK, May 2019, pp. 1323–1327.
- [16] C. Lazarus, P. Weiss, N. Chauffert, F. Mauconduit, L. El Gueddari, A. Vignaud, C. Destrieux, I. Zemmoura, and **P. Ciuciu**, “SPARKLING: variable-density k-space filling curves for accelerated MRI,” in *27th Proceedings International Society for Magnetic Resonance in Medicine*, Montreal, QC, Canada, May 2019, Abstract 110: Finalist of the Young Investigator Award.
- [17] O. Darwiche-Domingues, **P. Ciuciu**, D. La Rocca, P. Abry, and H. Wendt, “Multifractal analysis for cumulant-based epileptic seizure detection in EEG time series,” in *16th International Symposium on Biomedical Imaging*, Venice, Italy, Apr. 2019, pp. 143–146.
- [18] L. El Gueddari, **P. Ciuciu**, E. Chouzenoux, A. Vignaud, and J.-C. Pesquet, “Calibrationless OSCAR-based image reconstruction in compressed sensing parallel MRI,” in *16th International Symposium on Biomedical Imaging*, Venice, Italy, Apr. 2019, pp. 1532–1536.
- [19] C. Lazarus, P. Weiss, L. El Gueddari, A. Vignaud, and **P. Ciuciu**, “Z-variable-density stack of 2D SPARKLING for isotropic high resolution  $T_2^*$  MRI at 7 Tesla,” in *International BASP Frontiers workshop 2019*, Villars-sur-Ollon, Switzerland, Feb. 2019, p. 95.
- [20] H. Cherkaoui, L. El Gueddari, C. Lazarus, A. Grigis, F. Poupon, A. Vignaud, S. Farrens, J.-L. Starck, and **P. Ciuciu**, “Analysis vs synthesis-based regularization for combined compressed sensing and parallel MRI reconstruction at 7 Tesla,” in *26th European Signal Processing Conference (EUSIPCO)*, Roma, Italy, Sep. 2018, pp. 36–40.
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- [49] C. Rabrait, **P. Ciuciu**, A. Ribès, C. Poupon, P. Leroux, D. Le Bihan, and F. Lethimonnier, “Localized parallel echo volume imaging at 1.5T: a first extensive fMRI study,” in *15th Proc. ISMRM*, May 2007, (oral).

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- [53] **Ciuciu, P.**, J. Idier, and S. Sockeel, “Modeling non-linear and non-stationary effects of the BOLD response using mixture models in fMRI,” in *12th Proc. HBM*, Florence, Italy, June 11-15 2006.
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- [57] **Ciuciu, P.**, Ch. Pallier, B. Thirion, , S. Mériaux, G. Dehaene-Lambertz, and S. Dehaene, “Hemodynamic response estimation in auditory sentence repetition,” in *11th Proc. HBM*, Toronto, Canada, June 2005.
- [58] S. Donnet, M. Lavielle, **Ciuciu, P.**, and J.-B. Poline, “BOLD single-trial variability and model selection,” in *10th Proc. HBM*, Budapest, Hungary, June 2004.
- [59] S. Makni, **Ciuciu, P.**, J. Idier, and J.-B. Poline, “A region-based method for the estimation of the neural impulse response in event-related fMRI,” in *10th Proc. HBM*, Budapest, Hungary, June 2004.
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## 9 Invited talks and seminars (since 2002)

- [1] **P. Ciuciu** and Z. Saghi, “Compressed Sensing for Imaging,” MINATEC/CEA Grenoble, France, Nov. 2021, CEA: Key note of the Transverse Working Program on Numerical Simulation and AI.
- [2] **P. Ciuciu**, “Accelerated non-Cartesian MR imaging: From shorter data acquisition to faster image reconstruction,” Aalto University, Finland, Nov. 2021, ABC Seminar: Human brain imaging.
- [3] **P. Ciuciu**, “Functional Connectivity in the Infra-slow Human Brain Activity in MEG,” Helsinki, Finland, Nov. 2021, Neuroscience Center (HiLIFE, University of Helsinki).
- [4] **P. Ciuciu**, “Accelerated MR imaging: from shorter data acquisition to faster image reconstruction,” La Timone Hospital, Marseille, France, Oct. 2021, French Ultra-high field Network.
- [5] **P. Ciuciu**, “Accelerated MR imaging: from shorter data acquisition to faster image reconstruction,” Marseille (virtual), France, Jan. 2021, Aix-Marseille Université.
- [6] **P. Ciuciu**, “Accelerated MR imaging: from shorter data acquisition to faster image reconstruction,” Gif-sur-Yvette (virtual), France, Dec. 2020, CEA/NeuroSpin seminars.
- [7] **P. Ciuciu**, “Online MR image reconstruction for compressed sensing acquisition in  $T_2^*$  imaging,” Gif-sur-Yvette (virtual), France, Oct. 2020, L2S– CNRS– Supélec – Université Paris-Saclay.
- [8] **P. Ciuciu**, “Emergence of  $\beta$  and  $\gamma$  networks following multisensory training,” Helsinki, Finland, Feb. 2020, Neuroscience Center, University of Helsinki.
- [9] **P. Ciuciu**, “SPARKLING: variable-density k-space filling curves for accelerated T2\*-weighted MRI,” Sophia-Antipolis, France, Oct. 2019, Inria Sophia-Antipolis, Université Côte d’Azur.
- [10] **P. Ciuciu**, “Online MR image reconstruction for compressed sensing acquisition in  $T_2^*$  imaging,” Sophia-Antipolis, France, Oct. 2019, I3S – CNRS.
- [11] **P. Ciuciu**, “Online MR image reconstruction for compressed sensing acquisition in  $T_2^*$  imaging,” San Diego, CA, USA, Aug. 2019, SPIE in Optics & Photonics: workshop on Wavelets and Sparsity XVIII. Special session on « Inverse problems in MRI ».
- [12] **P. Ciuciu**, “Apprentissage profond pour la reconstruction d’images IRM acquises sous forme comprimée,” Paris, France, Apr. 2019, Collège de France.
- [13] **P. Ciuciu**, “SPARKLING: variable-density k-space filling curves for accelerated T2\*-weighted MRI,” Geneva, Switzerland, Feb. 2019, Geneva University Hospital.
- [14] **P. Ciuciu**, “SPARKLING: variable-density k-space filling curves for accelerated T2\*-weighted MRI,” Edinburgh, UK, Nov. 2018, Heriot-Watt University, School of Engineering and Physical Sciences.



- [15] **P. Ciuciu**, “Distribution-controlled and optimally spread sampling trajectories for accelerated Magnetic Resonance Imaging,” Cachan, France, May 2018, 8th International Conference on New Computational Methods for Inverse Problems.
- [16] **P. Ciuciu**, “Statistical modeling and Bayesian inference of functional ASL data,” Paris, France, Mar. 2018, St Anne Hospital & INSERM Centre Psychiatrie et Neurosciences, IMABRAIN meeting.
- [17] **P. Ciuciu**, “Multifractal Analysis of Neural Activity in MEG reveals Convergence to a Learning-predictive Cortical Regime,” Montreal, QU, Canada, Dec. 2017, Perform Centre, Concordia University.
- [18] **P. Ciuciu**, “Prospective SPARKLING trajectories for accelerated 2D high resolution MRI at 7 Tesla,” Montreal, QU, Canada, Dec. 2017, École Polytechnique de Montreal.
- [19] **P. Ciuciu**, “Prospective SPARse K-space sampLING (SPARKLING) for accelerated 2D anatomical imaging at 7 Tesla,” Nice, France, Sep. 2017, Manifold learning workshop, H2020 Dedale workshop.
- [20] **P. Ciuciu**, “Multifractal Analysis of Neural Activity (MEG) Reveals Convergence to an Optimal Cortical Regime That Predicts Learning,” Laufer Center Lecture Hall, Stony Brook, NY, USA, May 2017, Univ. of Stony Brook.
- [21] **P. Ciuciu**, “Convergence of Neural Activity (MEG) to Asymptotic Multifractal Dynamics in MEG Predicts Learning,” Langone Health center, NYC, USA, May 2017, NYU, School of Medicine.
- [22] **P. Ciuciu**, “Sparkling: Novel non-Cartesian sampling schemes for accelerated 2D anatomical imaging at 7 Tesla,” Vancouver, Canada, Dec. 2016, IEEE lecture, Univ. British Columbia.
- [23] **P. Ciuciu**, “Convergence of neural activity to multifractal attractors in MEG predicts learning,” Avignon, France, Sep. 2016, GDR of Multifractal Analysis.
- [24] **P. Ciuciu**, “Impact of perceptual learning on resting-state fMRI connectivity: A supervised classification study,” Budapest, Hungary, Aug. 2016, EUSIPCO conference: Special session on unraveling brain networks from functional neuroimaging data.
- [25] **P. Ciuciu**, “Compressive sensing for MRI,” Rennes, France, 21 June 2016, INRIA Bretagne Atlantique.
- [26] **P. Ciuciu**, “New physically plausible compressive sampling schemes for MRI: First results at 7 tesla,” Valbonne, France, 17 June 2016, INRIA Sophia-Antipolis.
- [27] **P. Ciuciu**, “Convergence to asymptotic multifractal dynamics in MEG predicts learning,” Geneva, Switzerland, 3 May 2016, University of Geneva - Campus BioTech.
- [28] **P. Ciuciu**, “On the generation of physically plausible  $k$ -space trajectories: from simulations to real acquisitions,” Palaiseau, France, 23 Mar. 2016, CEA visiting committee on High Performance Computing.

- [29] **P. Ciuciu**, “Compressed sensing for high resolution MRI at 7 Tesla,” Grenoble, France, 8 Feb. 2016, GIN INSERM.
- [30] **P. Ciuciu**, “Compressed sensing for high resolution MRI at 7 Tesla,” Gif-sur-Yvette, France, 5 Feb. 2016, Workshop on the 7 Tesla magnet, NeuroSpin.
- [31] **P. Ciuciu**, “On the generation of compressed sampling schemes in MRI,” Gif-sur-Yvette, France, 28 Jan. 2016, Cosmostat lab, IRFU/CEA.
- [32] **P. Ciuciu**, “Complexity measures in brain activity: The functional role of scale-free brain dynamics,” Jean-Kuntzmann lab., Grenoble, France, 8 Dec. 2015, IXXI Rhône-Alpes.
- [33] **P. Ciuciu**, “Convergence to asymptotic multifractal dynamics predicts learning,” Paris, France, 13 Mar. 2015, European Institute of Theoretical Neuroscience.
- [34] **P. Ciuciu**, A. Frau-Pascual, Th. Vincent, and F. Forbes, “Physiologically informed Bayesian analysis of ASL fMRI data,” GIPSA Lab, Grenoble, France, 5 Dec. 2014, Workshop on challenges in multimodality, CHES ERC project.
- [35] **P. Ciuciu**, “Joint detection-estimation of brain activity in fMRI,” Toulouse, France, 14 Nov. 2014, Atelier restauration d’images CNES.
- [36] **P. Ciuciu** and S. Badillo, “Multi-subject Bayesian joint detection and estimation in fMRI,” University of Warwick, Coventry, UK, 5 Sep. 2014, NeuroStats workshop.
- [37] **P. Ciuciu**, N. Chauffert, and P. Weiss, “An accelerated proximal gradient algorithm for gradient waveforms design in Magnetic Resonance Imaging,” University of Bristol, UK, 28 Aug. 2014, Workshop on High-dimensional Stochastic Simulation and Optimisation in Image Processing.
- [38] **P. Ciuciu**, “Scaling phenomena in brain activity: review, evidences, analysis and impact,” Banff, AL, Canada, 27 Feb. 2014, BIRS workshop: Multifractal Analysis: From Theory to Applications and Back.
- [39] **P. Ciuciu**, P. Abry N. Zilber, and V. van Wassenhove, “Convergence to asymptotic multifractal dynamics predicts learning,” Montreal, QB, Canada, 25 Oct. 2013, CRM, Univ. of Montreal. Scale-free dynamics & Functional Connectivity workshop.
- [40] **P. Ciuciu**, N. Chauffert, and P. Weiss, “Physically plausible compressed sensing schemes for MRI,” Lausanne, Suisse, 2 July 2013, École Polytechnique Fédérale de Lausanne.
- [41] **P. Ciuciu**, “VEM vs. MCMC inference for the joint detection estimation of brain activity in fMRI,” Toulouse, France, 24-28 June 2013, CIMI LabEx International workshop, université Paul Sabatier.
- [42] **P. Ciuciu**, “Compressed sensing in MRI,” Toulouse, France, 28 Jan. 2013, Séminaire du Centre International de Mathématique et d’Informatique de Toulouse, université Paul Sabatier.

- [43] **P. Ciuciu**, “MRI: from acquisition to reconstruction,” Toulouse, France, 14 Jan. 2013, Séminaire du Centre International de Mathématique et d’Informatique de Toulouse, université Paul Sabatier.
- [44] **P. Ciuciu**, “Modulation of scale-free properties of brain activity in MEG,” Paris, France, 28 Aug. 2012, 18ième congrès international Biomag.
- [45] **P. Ciuciu**, “Scale-free and multifractal time dynamics of fMRI signals during rest and task,” Gif-sur-Yvette, France, 15 June 2012, UNICOG INSERM/CEA U992 meeting, NeuroSpin.
- [46] **P. Ciuciu**, “Scale-free and multifractal time dynamics in the brain,” Créteil, France, 1er June 2012, SCAM, universités Paris XII & Paris-Est.
- [47] **P. Ciuciu**, “A VEM solution to the joint detection estimation of brain activity in fMRI,” Toulouse, France, Feb. 2012, Séminaire image IMT, université Paul Sabatier.
- [48] **P. Ciuciu**, “Multifractal properties of the fMRI signal during rest and task,” Bethesda, 20 Sep. 2011, NIH/NINDS/LFMI meeting.
- [49] **P. Ciuciu**, “Multifractal analysis of resting state networks in functional MRI,” Chicago, IL, USA, Mar. 2011, IEEE ISBI conference: special session on “Wavelets in EEG/fMRI”.
- [50] **P. Ciuciu**, “Image reconstruction from multiple sensors using Stein’s principle. Application to parallel MRI,” Chicago, IL, USA, Mar. 2011, IEEE ISBI conference: special session on “Wavelets in EEG/fMRI”.
- [51] **P. Ciuciu**, “Multifractal analysis of resting state networks in functional MRI,” Grenoble, France, Apr. 2011, GIPSA lab (CNRS).
- [52] **P. Ciuciu**, “Impact of the joint detection-estimation approach on group level analyses in fMRI,” Strasbourg, France, Nov. 2010, Université Louis Pasteur.
- [53] **P. Ciuciu**, “Impact of the parallel mri reconstruction algorithm on brain activity detection in fMRI,” Roma, France, Nov. 2010, IEEE ISABEL workshop.
- [54] **P. Ciuciu**, “Post-modern fMRI data analysis in parallel imaging,” Gif-sur-Yvette, France, 13 Sep. 2010, Séminaire NeuroSpin/CEA.
- [55] **P. Ciuciu**, “Bayesian joint detection estimation of brain activity in fMRI,” Sophia-Antipolis, France, 16 Dec. 2009, INRIA Sophia-Antipolis, équipe Asclepios.
- [56] **P. Ciuciu**, “Bayesian joint detection estimation of brain activity in fMRI,” Grenoble, France, 26 Nov. 2009, Séminaire de statistiques du laboratoire Jean Kuntzmann, INRIA Grenoble & université Joseph Fourier.
- [57] **P. Ciuciu**, “Bayesian joint detection estimation of brain activity in fMRI,” Palaiseau, France, 24 Nov. 2009, CMAP, École Polytechnique.

- [58] **P. Ciuciu**, “Spatially adaptive mixture models for analysis of fmri time series,” Paris, France, Oct. 2009, GDR CNRS Stats-Santé, université Paris V.
- [59] **P. Ciuciu**, L. Chaari, and J.-C. Pesquet, “Unsupervised wavelet-based regularization in parallel MRI,” Porquerolles, France, 9 June 2009, OPTIMED (ANR project) closing workshop.
- [60] **P. Ciuciu**, “Extrapolation schemes for fast 3D Potts field partition function estimation. Application to fMRI image analysis,” Paris, France, 26 Mar. 2009, GDR CNRS ISIS, Télécom Paris-Tech.
- [61] **P. Ciuciu**, “Bayesian analysis of event-related fMRI data,” Oxford, United Kingdom, Sep. 2008, fMRIB, John Radcliffe hospital, Oxford university.
- [62] **P. Ciuciu**, P. Abry, and C. Rabrait, “Probing complexity in brain dynamics- a wavelet-based multifractal approach,” Montreal, Canada, June 2008, École Polytechnique de Montreal.
- [63] **P. Ciuciu**, “Bayesian contributions to the analysis of brain activity from fMRI data,” Montreal, Canada, June 2008, MITACS workshop on Signal Processing Methods in Brain Imaging.
- [64] **P. Ciuciu**, “Bayesian contributions to the joint detection-estimation of brain activity in fMRI,” Orsay, France, 17 Apr. 2008, INRIA Saclay, Select team.
- [65] **P. Ciuciu**, “Within-subject analysis of fMRI data analysis: advanced bold signal models,” Strasbourg, France, 5 Aug. 2005, Centre d’Études de Physiologie Appliquée, Unité CNRS UPS 858.
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- [1] **P. Ciuciu**, “New Trends in Acquisition and Reconstruction for Compressed Sensing MRI,” St Jacut de la Mer, France, June 2022, 14th IEEE EMBS Summer School on Biomedical Imaging.
- [2] **P. Ciuciu**, “Recent advances in acquisition and reconstruction for Compressed Sensing MRI ,” Venice, Italy, Apr. 2019, Tutorial at the 16th IEEE International Symposium on Biomedical Imaging.
- [3] **P. Ciuciu**, “MRI reconstruction,” Strasbourg, France, Nov. 2016, IEEE NSSC & MIC conference.
- [4] **P. Ciuciu**, “Functional MRI: physiology, modeling, Bayesian inference and neurosciences,” Saint-Lary Soulan, France, 10-14 June 2013, école d’été du Centre International de Mathématique et d’Informatique de Toulouse, université Paul Sabatier, Toulouse.

- [5] **P. Ciuciu**, “Inverse problems in functional brain imaging,” Porquerolles, France, 6-10 May 2010, école de printemps CNRS GdR ISIS, Problèmes inverses en traitement des signaux et des images.
- [6] **P. Ciuciu**, “Inverse problems in functional brain imaging,” Peyresq, France, July 2009, 4ème école d’été CNRS GdR ISIS, Problèmes inverses en traitement des signaux et des images.
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