Curriculum Vitæ

Alexandre Bousse

1 Personal Details

First Name:	Alexandre
Family Name:	Bousse
Date of Birth:	13th of June 1980
Place of Birth:	Rennes, France
Citizenship:	French
Current Position:	Lecturer (Associate Professor), *Université de Bretagne Occidentale* (UBO), Brest, France
Research Institute:	*Laboratoire de Traitement de l'Information Médicale* (LaTIM) INSERM, UMR 1101, Brest, France
Email Address:	alexandre.bousse@univ-brest.fr

2 Qualifications

2019 | ***Habilitation à diriger des recherches*** **(habilitation thesis)**, LaTIM, INSERM, UMR 1101, UBO, Brest, France
Title: "*Contributions à la reconstruction tomographique*"
Viva: 07/10/2019
Jury:
- Dimitris Visvikis, LaTIM, INSERM, UMR 1101, *Université de Bretagne Occidentale*, Brest, France
- Françoise Pène, UBO, Brest, France
- Claude Comtat, *Commissariat à l'Énergie Atomique et aux énergies alternatives* (CEA), Orsay, France
- Andrew Reader, King's College London, London, UK
- Michel Defrise, *Université Libre de Bruxelles*, Brussels, Belgium

2018 | ***Maître de conférences*** **(associate professor)**
Section 61, *génie informatique, automatique et traitement du signal*
Candidate number: 18261293118

3 Academic Career

3.1 Professional Experience

2018–present | **Associate Professor**, LaTIM, INSERM, UMR 1101, UBO, Brest, France

2009–2018	**Post-doctorate**, Insitute of Nuclear Medicine, University College London (UCL), London, UK
2005–2008	**PhD Candidate**, *Laboratoire du Traitement du Signal et de l'Image* (LTSI), INSERM, UMR 1099, *Université de Rennes 1*, Rennes, France

3.2 Education

2005–2008	**PhD**, Signal Processing, LTSI, UMR 1099, *Université de Rennes 1*, Rennes, France, and Laboratory of Image Science and Technology (LIST), Southeast University (SEU), Nanjing, China Title: "Inverse Problems and Application to Motion-Compensated Rotational X-ray Angiography" Viva: 08/12/2008 Jury: • Directors: – J.-L. Coatrieux, LTSI, INSERM, UMR 1099, *Université de Rennes 1*, Rennes, France – H. Shu, LIST, SEU, Nanjing, China – C. Toumoulin, LTSI, INSERM, UMR 1099, *Université de Rennes 1*, Rennes, France • President: J. Demongeot, *Université Joseph Fourier*, Grenoble, France • Referees: – J. Yang, Nanjing University of Science and Technology, Nanjing, China – C. Roux, *Télécom Bretagne*, Brest, France • Reviewers: – L. Luo, LIST, SEU, Nanjing, China – D. Xia, Nanjing University of Science and Technology, Nanjing, China
2004–2005	**Research Master of Science, Statistics**, *Université de Rennes 1*, Rennes, France, with honours
2003–2004	**Advanced Master of Science, Statistics**, *Université de Rennes 1*, Rennes, France, with honours
1998–2003	**Bachelor of Science, Mathematics**, *Université de Rennes 1*, Rennes, France, with honours

4 Teaching Activities and PhD Supervision

4.1 Teaching

2018–present	**Coordinator** of *Master Signaux Images en Biologie et Médecine* (SIBM) at UBO
2018–present	**Image Processing** First of year Engineering School at IMT *Atlantique*, Brest, France M1 *biologie-santé* & M2 SIBM, UBO and IMT *Atlantique*, Brest, France Teaching topics: image processing, reconstruction and segmentation
2018–present	**Image Reconstruction** M2 *physique et instrumentation*, UBO, Brest, France Teaching topics: algorithmic for PET image reconstruction
2018–present	**Pix**

	Medical and Dental School, UBO, Brest, France Teaching topics: digital tools and the Internet
2005–2007	**Probability** (contractual teaching during PhD) First of year Engineering School, ENSAI, Rennes, France Math and Economy Section Teaching topics: measure theory, Lebesgue measure, probability spaces, random variables, Banach and Hilbert spaces, harmonic analysis
2004–2005	**Statistics** (contractual teaching during PhD) First of year Engineering School, ENSAI, Rennes, France Economy Section Teaching topics: parametric estimation, statistical hypothesis testing, linear regression

4.2 PhD Supervision and Co-supervision

2018–present	Baptiste Laurent, UBO (co-supervision) "*Estimation des diffusés en TEP par apprentissage profond*" Supervisor: Nicolas Boussion
2018–present	Sai Sundar Kandarpa, UBO (co-supervision) "PET Image Reconstruction using Deep-Learning" Supervisor: Dimitris Visvikis
2018–present	Suxer Alfonso Garcia, UBO (co-supervision) "Dual Energy CBCT Reconstruction for Dose Computation in Radiotherapy" Supervisor: Dimitris Visvikis
2018–present	Debora Giovagnoli, IMTA *Atlantique* (co-supervision) "3-γ Image Reconstruction using LXe Compton camera XEMIS2" Supervisor: Dimitris Visvikis
2015–2018	Yu-Jung Tsai, UCL (co-supervision) "Improvement of the Quantification Accuracy in PET/CT" Supervisor: Kris Thielemans
2016–2018	Élise Émond, UCL (co-supervision) 'Improving Quantification of Dynamic PET/CT Biomarkers in the Fibrotic Lung for the Evaluation of Disease Progression and Treatment Effectiveness" Supervisor: Kris Thielemans
2016–2018	Ludovica Brusaferri, UCL (co-supervision) "Estimating Lung Density from PET Data" Supervisor: Kris Thielemans
2014–2017	Ottavia Bertolli, UCL (co-supervision) "Data-Driven Methods for Respiratory Signal Detection in Positron Emission Tomography" Supervisor: Kris Thielemans
2012–2016	Debora Salvado, UCL (co-supervision) "SPECT System Design Optimisation for a Simultaneous SPECT/MRI Clinical Scanner" Supervisor: Brian F. Hutton
2012–2016	Beverley F. Holman, UCL (co-supervision) "Improving Quantification of PET/CT Biomarkers for Evaluation of Disease Progression and Treatment Effectiveness in Pulmonary Fibrosis"

	Supervisor: Kris Thielemans
2010–2015	Sarah Cade, UCL (co-supervision) "Attenuation Correction of Myocardial Perfusion Scintigraphy Images without Transmission Scanning" Supervisor: Brian F. Hutton

5 Grants and External Funding

2019	**France Life Imaging WP4** Amount awarded: 24,000€ Research topic: Dual-tracer in dynamic PET **Role: PI**
2019	**AO *Émergence*** Amount awarded: 15,000€ Research topic: Dual-tracer in dynamic PET **Role: PI**
2016	**GE Healthcare** Amount awarded: $150,000 Research topic: Novel PET reconstruction techniques PI: Kris Thielemans **Role: Postdoc – Research Fellow**
2013	**Spectrum Dynamics** Research topic: Joint activity and attenuation reconstruction in SPECT using scatter information PI: Brian F. Hutton **Role: Postdoc – WP leader**
2013	**FP7-HEALTH Program 305311** Research topic: Design of a clinical brain SPECT/MRI INSERT Supervisor: Brian F. Hutton **Role: Postdoc – Research Fellow**
2013	**EPSRC EP/K005278/1** Amount awarded: £1,274,298 PI: Brian F. Hutton Research topic: Motion-Compensated PET/MRI reconstruction **Role: Postdoc – WP leader**
2009	**EPSRC EP/G026483/1** Amount awarded: £767,088 Research topic: PET and SPECT reconstruction with *a priori* anatomical information PI: Brian F. Hutton **Role: Postdoc – Research Fellow**

6 Academic Service and Scientific Diffusion

6.1 Meetings Organisation

2018	**Session Chairman**, IEEE Nuclear Science Symposium and Medical Imaging Conference

6.2 International Partnerships

As part of an exchange program between *Université de Rennes 1* and Nanjing Southeast University, I spent one year and a half in Nanjing, China, where my PhD viva took place. Other partnerships include:

- PhD in partnership with SEU, Nanjing, China
- Spectrum Dynamics, Caesarea, Israel
- GE Healthcare, Waukesha, WI, USA
- INSERT project: Mediso (Budapest, Hungary), CROmed (Budapest, Hungary) Nuclear-Fields (Vortum-Mullem, Netherlands)
- Department of Mathematics of *Pontificia Universidad Católica de Chile*, Santiago, Chile

6.3 Reviewer

6.3.1 Journals and Conferences

- IEEE Transactions on Medical Imaging
- IEEE Transactions on Biomedical Imaging
- IEEE Transactions on Radiation and Plasma Medical Sciences
- IEEE Medical Imaging Conference 2014, 2015, 2016 and 2018
- Physics in Medicine and Biology
- Medical Physics
- Neuroinage
- PLOS one

6.3.2 Grant Application Schemes

- Nantes Excellence Trajectory (NEXT)
- *Wetenschappelijk Fonds Willy Gepts*
- Netherlands Organisation for Scientific Research (NWO)

6.4 Recent Invited Talks

Jul. 2019	"Innovations in Image Reconstruction", LaTIM, Brest, France
Feb. 2019	"*Reconstruction d'image en tomographie à émission de positons par maximum de vraisemblance avec compensation du mouvement respiratoire* ", *Laboratoire de Mathématiques de Bretagne Atlantique*, Brest, France
Jun. 2018	"Respiratory Motion Correction in PET/CT and PET/MR", Mathematical Methods for Spatiotemporal Imaging, SIAM Conference on Imaging Science 2018, Bologna, Italy
Mar. 2017	"Maximum-Likelihood PET Reconstruction and Motion Estimation", *Pontificia Universidad Católica de Chile*, Santiago, Chile

Sept. 2016	"Direct Motion Compensation in Attenuation-Corrected PET/CT and PET/MR Reconstruction", UCL PET/MR Methods Symposium, London, UK
May 2016	"*Reconstruction en PET-CT avec compensation du mouvement par techniques de maximum de vraisemblance*", CEA, Orsay, France
Mar. 2016	"Motion-Compensated PET Image Reconstruction by Maximum-Likelihood", Newton Project Workshop on Brazil/UK Collaboration: the Future of Molecular Imaging, Recife, Brazil
Nov. 2015	"Gated PET Reconstruction with Motion Compensation and Attenuation Correction using non-Gated CT", Brain Institute, Hospital Israelita Albert Einstein, São Paulo, Brazil

6.5 Software Development: JRM

Joint Reconstruction and Motion estimation (JRM) is a Matlab toolbox for motion-compensated attenuation corrected PET that I developed for UCL and GE Healthcare. A "light" version is available at https://gitlab.com/abousse/jrm_lite.

7 Publications

Peer-Reviewed Journal Papers, in Review

[S1] L. Brusaferri, **A. Bousse**, É. C. Émond, R. Brown, Y.-J. Tsai, D. Atkinson, S. Ourselin, C. Watson, B. F. Hutton, S. Arridge, and K. Thielemans, "Joint activity, attenuation and scatter estimation from multiple energy window data in non-TOF 3D PET," *IEEE Transactions on Medical Imaging (in review)*, 2019.

[S2] É. C. Émond, **A. Bousse**, B. F. Hutton, and K. Thielemans, "Improved PET/CT respiratory motion compensation by incorporating changes in lung density," *IEEE Transactions on Medical Imaging (in review)*, 2019.

[S3] Y.-J. Tsai, **A. Bousse**, S. Ahn, S. Arridge, C. W. Stearns, B. F. Hutton, and K. Thielemans, "Algorithms for solving misalignment issues in penalized PET/CT reconstruction using anatomical priors," *IEEE Transactions on Medical Imaging (in review)*, 2019.

Peer-Reviewed Journal Papers

[J1] **A. Bousse**, M. Courdurier, É. C. Émond, K. Thielemans, B. F. Hutton, P. Irarrazaval, and D. Visvikis, "PET reconstruction with non-negativity constraints in projection space: Optimization through hypo-convergence," *IEEE Transactions on Medical Imaging (preprint)*, 2019.

[J2] A. Iborra, A. J. González, A. González-Montoro, **A. Bousse**, and D. Visvikis, "Ensemble of neural networks for 3D position estimation in monolithic PET detectors," *Physics in Medicine & Biology (preprint)*, 2019.

[J3] Y.-J. Tsai, G. Schramm, S. Ahn, **A. Bousse**, S. Arridge, J. Nuyts, B. F. Hutton, C. W. Stearns, and K. Thielemans, "Benefits of using a spatially-variant penalty strength with anatomical priors in PET reconstruction," *IEEE Transactions on Medical Imaging (preprint)*, 2019.

[J4] Y.-J. Tsai, **A. Bousse**, M. J. Ehrhardt, C. W. Stearns, S. Ahn, B. H. Hutton, S. Arridge, and K. Thielemans, "Fast quasi-newton algorithms for penalized reconstruction in emission tomography and further improvements via preconditioning," *IEEE Transactions on Medical Imaging*, vol. 37, no. 4, pp. 1000–1010, 2018.

[J5] **A. Bousse**, R. Manber, B. F. Holman, D. Atkinson, S. Arridge, S. Ourselin, B. F. Hutton, and K. Thielemans, "Evaluation of a direct motion estimation/correction method in respiratory-gated PET/MRI with motion-adjusted attenuation," *Medical Physics*, vol. 44, no. 6, pp. 2379–2390, 2017.

[J6] J. Jiao, **A. Bousse**, K. Thielemans, N. Burgos, P. Weston, P. Markiewicz, J. Schott, D. Atkinson, S. Arridge, B. F. Hutton, and S. Ourselin, "Direct parametric reconstruction with joint motion estimation/correction for dynamic brain PET data," *IEEE Transactions on Medical Imaging*, vol. 36, no. 1, pp. 203–213, 2017.

[J7] **A. Bousse**, O. Bertolli, D. Atkinson, S. Arridge, S. Ourselin, B. F. Hutton, and K. Thielemans, "Maximum-likelihood joint image reconstruction and motion estimation with misaligned attenuation in TOF-PET/CT," *Physics in Medicine & Biology*, vol. 61, no. 3, pp. L11–19, 2016.

[J8] **A. Bousse**, O. Bertolli, D. Atkinson, S. Arridge, S. Ourselin, B. F. Hutton, and K. Thielemans, "Maximum-likelihood joint image reconstruction/motion estimation in attenuation-corrected respiratory gated PET/CT using a single attenuation map," *IEEE Transactions on Medical Imaging*, vol. 35, no. 1, pp. 217–228, 2016.

[J9] B. A. Thomas, V. Cuplov, **A. Bousse**, A. Mendes, K. Thielemans, B. H. Hutton, and K. Erlandsson, "PETPVC: a toolbox for performing partial volume correction techniques in positron emission tomography," *Physics in Medicine & Biology*, vol. 61, no. 22, pp. 7975–7993, 2016.

[J10] D. Salvado, K. Erlandsson, **A. Bousse**, M. Occipinti, C. Fiorini, B. F. Hutton, *et al.*, "Collimator design for a brain SPECT/MRI insert," *IEEE Transactions on Nuclear Science*, vol. 62, no. 4, pp. 1716–1724, 2015.

[J11] J. Jiao, **A. Bousse**, K. Thielemans, P. Markiewicz, N. Burgos, D. Atkinson, S. Arridge, B. F. Hutton, and S. Ourselin, "Joint parametric reconstruction and motion correction framework for dynamic PET data," *Med. Image Comput. Comput. Assist. Interv. Conf. Rec.*, vol. 17, no. 1, pp. 114–121, 2014.

[J12] B. A. Thomas, K. Erlandsson, I. Drobnjak, S. Pedemonte, K. Vunckx, **A. Bousse**, A. Reilhac-Laborde, S. Ourselin, and B. F. Hutton, "Framework for the construction of a monte carlo simulated brain PET-MR image database," *Nuclear Instruments and Methods in Physics Research Section A*, vol. 734, pp. 162–165, 2014.

[J13] B. F. Hutton, B. A. Thomas, K. Erlandsson, **A. Bousse**, A. Reilhac-Laborde, D. Kazantsev, S. Pedemonte, K. Vunckx, S. Arridge, and S. Ourselin, "What approach to brain partial volume correction is best for PET/MRI?" *Nuclear Instruments and Methods in Physics Research Section A*, vol. 702, pp. 29–33, 2013.

[J14] **A. Bousse**, S. Pedemonte, B. A. Thomas, K. Erlandsson, S. Ourselin, S. Arridge, and B. F. Hutton, "Markov random field and gaussian mixture for segmented MRI-based partial volume correction in PET," *Physics in Medicine & Biology*, vol. 57, no. 20, pp. 6681–6705, 2012.

[J15] D. Kazantsev, S. Arridge, S. Pedemonte, **A. Bousse**, K. Erlandsson, B. F. Hutton, and S. Ourselin, "An anatomically driven anisotropic diffusion filtering method for 3D SPECT reconstruction," *Physics in Medicine & Biology*, vol. 57, no. 12, p. 3793, 2012.

[J16] S. Pedemonte, **A. Bousse**, B. F. Hutton, S. Arridge, and S. Ourselin, "4-D generative model for PET/MRI reconstruction," *Med. Image Comput. Comput. Assist. Interv. Conf. Rec.*, vol. 14, no. 1, pp. 581–588, 2011.

[J17] **A. Bousse**, J. Zhou, G. Yang, J.-J. Bellanger, and C. Toumoulin, "Motion compensated tomography reconstruction of coronary arteries in rotational angiography," *IEEE Transactions on Biomedical Engineering*, vol. 56, no. 4, pp. 1254–1257, 2009.

[J18] J. Zhou, J.-L. Coatrieux, **A. Bousse**, H. Shu, and L. Luo, "A bayesian MAP-EM algorithm for PET image reconstruction using wavelet transform," *IEEE Transactions on Nuclear Science*, vol. 54, no. 5, pp. 1660–1669, 2007.

[J19] **A. Bousse**, C. Boldak, C. Toumoulin, G. Yang, S. Laguitton, and D. Boulmier, "Coronary extraction and characterization in multi-detector computed tomography," *ITBM-RBM*, vol. 27, no. 5, pp. 217–226, 2006.

Peer-Reviewed Conference Papers (Oral Presentations)

[O1] É. C. Émond, **A. Bousse**, A. M. Groves, B. F. Hutton, and K. Thielemans, "Joint reconstruction of activity image and motion estimation in dynamic PET from a single attenuation map," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2019.

[O2] D. Giovagnoli, **A. Bousse**, A. I. Carreres, T. Merlin, N. Beaupere, J.-P. Cussonneau, C. Canot, S. Diglio, J. Masbou, E. Morteau, Y. Xing, Y. Zhu, D. Thers, and D. Visvikis, "A novel image reconstruction approach for 3 gamma imaging," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2019.

[O3] **A. Bousse** and M. Courdurier, "Hypo-convergence for PET reconstruction with non-negativity constraints in projection space (abstract only)," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2018.

[O4] L. Brusaferri, **A. Bousse**, Y.-J. Tsai, D. Atkinson, S. Ourselin, B. F. Hutton, S. Arridge, and K. Thielemans, "Maximum-likelihood estimation of emission and attenuation images in 3D PET from multiple energy window measurements," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2018.

[O5] Y.-J. Tsai, **A. Bousse**, S. Ahn, C. W. Stearns, S. Arridge, B. F. Hutton, and K. Thielemans, "Algorithms for solving misalignment issues in penalized PET/CT reconstruction using anatomical priors," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2018.

[O6] L. Brusaferri, **A. Bousse**, N. Efthimiou, É. C. Émond, D. Atkinson, S. Ourselin, B. F. Hutton, S. Arridge, and K. Thielemans, "Potential benefits of incorporating energy information when estimating attenuation from PET data," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2017.

[O7] **A. Bousse**, A. Sidlesky, N. Roth, A. Rashidnasab, K. Thielemans, and B. F. Hutton, "Joint activity/attenuation reconstruction in SPECT using photopeak and scatter sinograms," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2016.

[O8] **A. Bousse**, O. Bertolli, D. Atkinson, S. Arridge, S. Ourselin, B. H. Hutton, and K. Thielemans, "Direct joint motion estimation/image reconstruction in attenuation-corrected gated PET/CT without gated CT," in *Fully 3D*, 2015.

[O9] **A. Bousse**, J. Jiao, K. Thielemans, D. Atkinson, S. Arridge, S. Ourselin, and B. F. Hutton, "Joint direct motion estimation/kinetic images reconstruction from gated PET data," in *Comp. Methods for Mol. Imag. MICCAI Workshop*, ser. Lect. Notes in Comput. Vision and Bio-Mech. Vol. 22, Springer International Publishing, 2015, pp. 53–62.

[O10] K. Vunckx, S. Arridge, **A. Bousse**, D. Kazantsev, S. Pedemonte, S. Ourselin, and B. F. Hutton, "Unifying global and local statistical measures for anatomy-guided emission tomography reconstruction," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2012, pp. 2161–2165.

[O11] D. Kazantsev, S. Arridge, S. Pedemonte, S. Ourselin, **A. Bousse**, and B. F. Hutton, "Robust anisotropic diffusion prior with anatomical regularization for 3D SPECT reconstruction," in *Fully 3D*, 2011.

Peer-Reviewed Conference Papers (Poster Presentations)

[P1] É. C. Émond, **A. Bousse**, L. Brusaferri, A. M. Groves, B. F. Hutton, and K. Thielemans, "Mass preservation for respiratory motion registration in both PET and CT," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2019.

[P2] A. Iborra, A. J. González, A. González-Montoro, **A. Bousse**, and D. Visvikis, "Ensemble of neural networks for 3d position estimation in monolithic PET detectors," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2019.

[P3] V. S. S. Kandarpa, D. Benoit, **A. Bousse**, and D. Visvikis, "Direct image reconstruction using generative deep learning networks," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2019.

[P4] **A. Bousse**, B. F. Hutton, and K. Thielemans, "Fast gated PET direct motion estimation using ordered subsets," in *Fully 3D*, 2017.

[P5] Y.-J. Tsai, G. Schramm, J. Nuyts, S. Ahn, C. W. Stearns, **A. Bousse**, S. Arridge, and K. Thielemans, "Spatially-variant strength for anatomical priors in PET reconstruction," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2017.

[P6] A. Rashidnasab, **A. Bousse**, B. F. Holman, B. F. Hutton, and K. Thielemans, "Joint reconstruction of activity and attenuation in dynamic PET," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2016.

[P7] Y.-J. Tsai, **A. Bousse**, C. W. Stearns, S. Ahn, B. F. Hutton, S. Arridge, and K. Thielemans, "Performance improvement and validation of a new MAP reconstruction algorithm," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2016.

[P8] Y.-J. Tsai, **A. Bousse**, M. J. Ehrhardt, B. F. Hutton, S. Arridge, and K. Thielemans, "Performance evaluation of MAP algorithms with different penalties, object geometries and noise levels," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2015.

[P9] **A. Bousse**, J. Jiao, L. Pizarro, K. Thielemans, D. Atkinson, S. Ourselin, S. Arridge, and B. F. Hutton, "An algorithm for direct 4-D PET image reconstruction/non-rigid motion estimation with limited MRI prior information," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2014, pp. 1–3.

[P10] **A. Bousse**, K. Erlandsson, N. Fuin, D. Salvado, and B. F. Hutton, "Variance prediction in SPECT reconstruction based on the fisher information using a novel angular blurring algorithm for computation of the system matrix," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2013, pp. 1–6.

[P11] **A. Bousse**, K. Erlandsson, S. Pedemonte, S. Ourselin, S. Arridge, and B. F. Hutton, "Angular rebinning for geometry independent SPECT reconstruction," in *Fully 3D*, 2013.

[P12] K. Erlandsson, D. Salvado, **A. Bousse**, and B. F. Hutton, "Design optimization and evaluation of a human brain SPECT-MRI insert based on high-resolution detectors and slit-slat collimators," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2013, pp. 1–4.

[P13] **A. Bousse**, C. Panagiotou, K. Erlandsson, S. Ourselin, S. Arridge, and B. F. Hutton, "Monotonic algorithm for joint entropy-based anatomical priors in parametric PET image reconstruction," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2012, pp. 3918–3924.

[P14] B. A. Thomas, K. Erlandsson, A. Reilhac, **A. Bousse**, D. Kazantsev, S. Pedemonte, K. Vunckx, S. Arridge, S. Ourselin, and B. F. Hutton, "A comparison of the options for brain partial volume correction using PET/MRI," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2012, pp. 2902–2906.

[P15] D. Kazantsev, **A. Bousse**, S. Pedemonte, S. Arridge, B. F. Hutton, and S. Ourselin, "Edge preserving Bowsher prior with nonlocal weighting for 3D SPECT reconstruction," in *IEEE Int. Symp. on Bio-med. Imag.: From Nano to Macro*, 2011, pp. 1158–1161.

[P16] S. Pedemonte, **A. Bousse**, B. F. Hutton, S. Arridge, and S. Ourselin, "Probabilistic graphical model of SPECT/MRI," in *Machine Learning in Med. Imag.*, 2011, pp. 167–174.

[P17] **A. Bousse**, S. Pedemonte, D. Kazantsev, S. Ourselin, S. Arridge, and B. F. Hutton, "Weighted MRI-based Bowsher priors for SPECT brain image reconstruction," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2010, pp. 3519–3522.

[P18] D. Kazantsev, S. Pedemonte, **A. Bousse**, C. Panagiotou, S. Arridge, B. F. Hutton, and S. Ourselin, "ET bayesian reconstruction using automatic bandwidth selection for joint entropy optimization," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2010, pp. 3301–3307.

[P19] S. Pedemonte, **A. Bousse**, K. Erlandsson, M. Modat, S. Arridge, B. F. Hutton, and S. Ourselin, "GPU accelerated rotation-based emission tomography reconstruction," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2010, pp. 2657–2661.

[P20] S. Pedemonte, M. J. Cardoso, **A. Bousse**, C. Panagiotou, D. Kazantsev, S. Arridge, B. F. Hutton, and S. Ourselin, "Class conditional entropic prior for MRI enhanced SPECT reconstruction," in *IEEE Nucl. Sci. Symp. Med. Imag. Conf. Rec.*, 2010, pp. 3292–3300.

[P21] J. Zhou, **A. Bousse**, G. Yang, J.-J. Bellanger, L. Luo, C. Toumoulin, and J.-L. Coatrieux, "A blob-based tomographic reconstruction of 3D coronary trees from rotational x-ray angiography," in *Medical Imaging 2008: Physics of Medical Imaging*, International Society for Optics and Photonics, vol. 6913, 2008, 69132N.

[P22] G. Yang, **A. Bousse**, C. Toumoulin, and H. Shu, "Simulation environment for the evaluation of 3D coronary tree reconstruction algorithms in rotational angiography," in *IEEE Eng. Med. Biol. Soc. Conf. Rec.*, 2007, pp. 4484–4487.

[P23] S. Laguitton, C. Boldak, **A. Bousse**, G. Yang, and C. Toumoulin, "Temporal tracking of coronaries in MSCTA by means of 3D geometrical moments," in *IEEE Eng. Med. Biol. Soc. Conf. Rec.*, 2006, pp. 924–927.

[P24] G. Yang, **A. Bousse**, C. Toumoulin, and H. Shu, "A multiscale tracking algorithm for the coronary extraction in MSCT angiography," in *IEEE Eng. Med. Biol. Soc. Conf. Rec.*, 2006, pp. 3066–3069.

[P25] J. Brieva, E. Gonzalez, F. Gonzalez, **A. Bousse**, and J.-J. Bellanger, "A level set method for vessel segmentation in coronary angiography," in *IEEE Eng. Med. Biol. Soc. Conf. Rec.*, vol. 6, 2004, pp. 6348–6351.

Conference Abstracts

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