

# 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:	<i>Maître de conférences</i> (associate professor) <i>Université de Bretagne Occidentale (UBO)</i> , Brest, France <i>Section 61—génie informatique, automatique et traitement du signal</i>
Research Institute:	<i>Laboratoire de Traitement de l'Information Médicale (LaTIM)</i> INSERM, UMR 1101, Brest, France
Email Address:	<a href="mailto:alexandre.bousse@univ-brest.fr">alexandre.bousse@univ-brest.fr</a>

## 2 Qualifications

## 3 Academic Career

### 3.1 Professional Experience

2018–present	<b>Associate Professor</b> , LaTIM, INSERM, UMR 1101, UBO, Brest, France
2009–2018	<b>Post-doctorate</b> , Insitute of Nuclear Medicine, University College London (UCL), London, UK
2005–2008	<b>PhD Candidate</b> , <i>Laboratoire du Traitement du Signal et de l'Image (LTSI)</i> , INSERM, UMR 1099, <i>Université de Rennes 1</i> , Rennes, France

### 3.2 Education

2019	<b><i>Habilitation à diriger des recherches</i></b> (habilitation thesis), LaTIM, INSERM, UMR 1101, UBO, Brest, France Title: “ <i>Contributions à la reconstruction tomographique compensée en mouvement</i> ” Viva: 07/10/2019
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	<p>Jury:</p> <ul style="list-style-type: none"> <li>• Dimitris Visvikis, LaTIM, INSERM, UMR 1101, <i>Université de Bretagne Occidentale</i>, Brest, France</li> <li>• Françoise Pène, UBO, Brest, France</li> <li>• Claude Comtat, CEA, Orsay, France</li> <li>• Andrew Reader, King's College London, London, UK</li> <li>• Michel Defrise, <i>Université Libre de Bruxelles</i>, Brussels, Belgium</li> </ul>
2005–2008	<p><b>PhD</b>, Signal Processing, LTSI, UMR 1099, <i>Université de Rennes 1</i>, 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:</p> <ul style="list-style-type: none"> <li>• Directors: <ul style="list-style-type: none"> <li>– J.-L. Coatrieux, LTSI, INSERM, UMR 1099, <i>Université de Rennes 1</i>, Rennes, France</li> <li>– H. Shu, LIST, SEU, Nanjing, China</li> <li>– C. Toumoulin, LTSI, INSERM, UMR 1099, <i>Université de Rennes 1</i>, Rennes, France</li> </ul> </li> <li>• President: J. Demongeot, <i>Université Joseph Fourier</i>, Grenoble, France</li> <li>• Referees: <ul style="list-style-type: none"> <li>– J. Yang, Nanjing University of Science and Technology, Nanjing, China</li> <li>– C. Roux, <i>Télécom Bretagne</i>, Brest, France</li> </ul> </li> <li>• Reviewers: <ul style="list-style-type: none"> <li>– L. Luo, LIST, SEU, Nanjing, China</li> <li>– D. Xia, Nanjing University of Science and Technology, Nanjing, China</li> </ul> </li> </ul>
2004–2005	<b>Master of Science (DEA), Statistics</b> , <i>Université de Rennes 1</i> , Rennes, France, with honours
2003–2004	<b>Master of Science (DESS), Statistics</b> , <i>Université de Rennes 1</i> , Rennes, France, with honours
1998–2003	<b>Bachelor of Science, Mathematics</b> , <i>Université de Rennes 1</i> , Rennes, France, with honours

## 4 Teaching Activities and PhD Supervision

### 4.1 Teaching

2018–present	<b>Coordinator</b> of M2 <i>Master Signaux Images en Biologie et Médecine</i> (SIBM) at UBO
2018–present	<p><b>Medical Image Processing</b>  M1 <i>biologie-santé</i> &amp; M2 SIBM  Image processing, reconstruction and segmentation  10 hours lecture per year</p>
2018–present	<p><b>Image Reconstruction</b>  M2 <i>physique et instrumentation</i>: UBO, Brest, France, 14 hours lecture &amp; 6 hours lab per year</p>

	First of year Engineering School at IMT <i>Atlantique</i> , Brest, France: 5 hours lecture per year
	Mathematics and algorithms for image reconstruction
2018–present	<b>Pix</b> Medical and Dental School, UBO, Brest, France 100 hours lab per year
2004–2007	<b>Probability &amp; Statistics</b> (contractual teaching during PhD) First of year Engineering School, ENSAI, Rennes, France Math and Economy Section Teaching topics: measure theory, random variables, parametric statistics, statistical hypothesis testing, linear regression 160 hours lab in total

## 4.2 PhD Supervision and Co-supervision

2018–present	Sai Sundar Kandarpa, UBO (100%) “PET Image Reconstruction using Deep-Learning” Director: Dimitris Visvikis Publications: [P3] Status: ongoing
2018–present	Suxer Alfonso Garcia, UBO (100%) “Dual Energy CBCT Reconstruction for Dose Computation in Radiotherapy” Director: Mathieu Hatt Status: ongoing
2017–present	Debora Giovagnoli, IMT <i>Atlantique</i> (50%) “3- $\gamma$ Image Reconstruction using LXe Compton Camera XEMIS2” Director: Dimitris Visvikis; co-supervisor: Thibaut Merlin (50%) Publications: [O2] Status: ongoing
2017–present	Baptiste Laurent, UBO (50%) “ <i>Estimation des diffusés en TEP par apprentissage profond</i> ” Director: Nicolas Boussion; co-supervisor: Thibaut Merlin (50%) Status: ongoing
2016–2020	Ludovica Brusafferri, UCL (50%) “Improving Quantification in non-TOF 3D PET/MR by Incorporating Photon Energy Information” Director: Kris Thielemans (50%) Publications: [J2], [O3], [O5] Status: completed
2016–2020	Élise Émond, UCL (50%) “Improving Quantification in Lung PET/CT for the Evaluation of Disease Progression and Treatment Effectiveness” Director: Kris Thielemans (50%) Publications: [J3], [P1], [O1], [A1] Status: completed
2014–2018	Yu-Jung Tsai, UCL (50%) “Penalised Image Reconstruction Algorithms for Efficient and Consistent Quantification in Emission Tomography”

	Director: Kris Thielemans (50%) Publications: [J4], [O4], [J6], [P5], [P7] Status: completed
2010–2015	Sarah Cade, UCL (50%) “Attenuation Correction of Myocardial Perfusion Scintigraphy Images without Transmission Scanning” Director: Brian F. Hutton; co-supervisor: Kjell Erlandsson (50%) Publications: [A5] Status: completed

## 5 Grants and External Funding

### 5.1 Funding at Current Position (since 01/09/2018)

2020	<b><i>Mobilité internationale</i></b> (France) Amount awarded: €1770 <b>Role: PI</b>
10/09/2019–present	<b>France Life Imaging WP4</b> (France) Amount awarded: €24,000 <b>Role: PI</b> Project Title: “Dual-Tracer in Dynamic PET” (complement funding to the <i>Émergence</i> project)
18/02/2019–present	<b>AO <i>Émergence Cancéropôle grand ouest</i></b> (France) Amount awarded: €15,000 <b>Role: PI</b> Project Title: “Dual-Tracer in Dynamic PET”

### 5.2 Funding during Postdoc at UCL (2009–2018)

2016–2018	<b>GE Healthcare</b> (USA) Amount awarded: \$150,000 <b>Role: co-PI</b> PI: Kris Thielemans Project Title: “Motion-Compensated PET/CT”
2014–2016	<b>Spectrum Dynamics</b> (Israel) Amount awarded: <b>Role: WP leader</b> PI: Brian F. Hutton Project Title: “Joint Activity and Attenuation Reconstruction in SPECT Using Scatter”
2013–2015	<b>FP7 – HEALTH Program 305311</b> (EU) Amount awarded: 575,622€ (5,981,463€ in total for all the EU partners) <b>Role: Research Fellow</b> PI: Brian F. Hutton Project Title: “Development of an integrated SPECT/MRI system”
2013–2016	<b>EPSRC – EP/K005278/1</b> (UK)

2009–2012	Amount awarded: £1,274,298 <b>Role: WP leader</b> PI: Brian F. Hutton Project Title: “Exploiting the Unique Quantitative Capabilities Offered by Simultaneous PET/MRI”
	<b>EPSRC – EP/G026483/1</b> (UK) Amount awarded: £767,088 <b>Role: Research Fellow</b> PI: Brian F. Hutton Project Title: “Optimising Reconstruction to Accommodate Complex System Models for Emission Tomography”

## 6 Academic Service and Scientific Diffusion

### 6.1 Meetings Organisation

2018	<b>Session Chairman</b> , IEEE Nuclear Science Symposium and Medical Imaging Conference
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### 6.2 International Partnerships

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

- Attenuation-map estimation from scatter in SPECT: Spectrum Dynamics, Caesarea, Israel
- Motion-Compensated PET/CT: GE Healthcare, Waukesha, WI, USA
- SPECT/MRI INSERT project: Polytechnic University of Milan (Italy), CROmed (Budapest, Hungary), Nuclear-Fields (Vortum-Mullem, Netherlands) and MRI Tools (Berlin, Germany)
- Xpulse project: ALPHaNOV, Talence, France
- Department of Mathematics of *Pontificia Universidad Católica de Chile*, Santiago, Chile

### 6.3 Scientific Evaluation

#### Journals and Conferences Peer Review

- IEEE Transactions on Medical Imaging
- IEEE Transactions on Biomedical Engineering
- IEEE Transactions on Radiation and Plasma Medical Sciences
- IEEE Medical Imaging Conference 2014, 2015, 2016 and 2018
- MICCAI 2020
- Physics in Medicine and Biology
- Neuroimage
- PLOS one

More details can be found on my [Publons profile](#).

## Grant Application Schemes Peer Review

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

## 6.4 Recent Invited Talks

Jul. 2019	“Innovations in Image Reconstruction”, LaTIM, Brest, France
Feb. 2019	“ <i>Reconstruction d’image en tomographie à émission de positons par maximum de vraisemblance avec compensation du mouvement respiratoire</i> ”, <i>Laboratoire de Mathématiques de Bretagne Atlantique</i> , 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”, <i>Pontificia Universidad Católica de Chile</i> , 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	“ <i>Reconstruction en PET-CT avec compensation du mouvement par techniques de maximum de vraisemblance</i> ”, 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, <i>Hospital Israelita Albert Einstein</i> , São Paulo, Brazil

## 6.5 Software Development: JRM

Name	Joint Reconstruction and Motion estimation (JRM)
Language	Matlab/C++
Description	Joint Reconstruction and Motion estimation (JRM) is a toolbox for motion-compensated attenuation-corrected PET reconstruction that I developed for UCL and GE Healthcare. While the full version cannot be distributed, a “light” version is available at the address below.
Source code	<a href="https://gitlab.com/abousse/jrm_lite">https://gitlab.com/abousse/jrm_lite</a>

## 7 Publications

### International 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*, vol. 39, no. 1, pp. 75–86, 2020. DOI: [10.1109/TMI.2019.2920109](https://doi.org/10.1109/TMI.2019.2920109). [Online]. Available: <https://hal.archives-ouvertes.fr/hal-02144923>.
- [J2] L. Brusaferrì, **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: A preliminary study,” *IEEE Transactions on Radiation and Plasma Medical Sciences (accepted)*, vol. 65, no. 8, 2020. DOI: [10.1109/TRPMS.2020.2978449](https://doi.org/10.1109/TRPMS.2020.2978449). [Online]. Available: <https://ieeexplore.ieee.org/document/9024002>.
- [J3] É. C. Émond, **A. Bousse**, J. P. Maria Machado, A. M. Groves, B. F. Hutton, and K. Thielemans, “Effect of attenuation mismatches in time of flight PET reconstruction,” *Physics in Medicine & Biology*, 2020. DOI: [10.1088/1361-6560/ab7a6f](https://doi.org/10.1088/1361-6560/ab7a6f). [Online]. Available: <https://iopscience.iop.org/article/10.1088/1361-6560/ab7a6f>.
- [J4] 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*, vol. 39, no. 1, pp. 11–22, 2020. DOI: [10.1109/TMI.2019.2913889](https://doi.org/10.1109/TMI.2019.2913889).
- [J5] 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*, vol. 64, no. 19, p. 195 010, 2019. DOI: [10.1088/1361-6560/ab3b86](https://doi.org/10.1088/1361-6560/ab3b86).
- [J6] 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. DOI: [10.1109/TMI.2017.2786865](https://doi.org/10.1109/TMI.2017.2786865). [Online]. Available: <https://doi.org/10.1109/TMI.2017.2786865>.
- [J7] **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. DOI: [10.1002/mp.12253](https://doi.org/10.1002/mp.12253). [Online]. Available: <https://doi.org/10.1002/mp.12253>.
- [J8] 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. DOI: [10.1109/TMI.2016.2594150](https://doi.org/10.1109/TMI.2016.2594150). [Online]. Available: <https://doi.org/10.1109/TMI.2016.2594150>.
- [J9] **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. DOI: [10.1088/0031-9155/61/3/L11](https://doi.org/10.1088/0031-9155/61/3/L11). [Online]. Available: <https://doi.org/10.1088/0031-9155/61/3/L11>.
- [J10] **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. DOI: [10.1109/TMI.2015.2464156](https://doi.org/10.1109/TMI.2015.2464156). [Online]. Available: <https://doi.org/10.1109/TMI.2015.2464156>.
- [J11] 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. DOI: [10.1088/0031-9155/61/22/7975](https://doi.org/10.1088/0031-9155/61/22/7975). [Online]. Available: <https://discovery.ucl.ac.uk/id/eprint/1523346/>.

- [J12] 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. DOI: [10.1109/TNS.2015.2450017](https://doi.org/10.1109/TNS.2015.2450017). [Online]. Available: <https://doi.org/10.1109/TNS.2015.2450017>.
- [J13] 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,” *Lecture Notes in Computer Science*, vol. 17, no. 1, pp. 114–121, 2014. DOI: [10.1007/978-3-319-10404-1\\_15](https://doi.org/10.1007/978-3-319-10404-1_15). [Online]. Available: [https://doi.org/10.1007/978-3-319-10404-1\\_15](https://doi.org/10.1007/978-3-319-10404-1_15).
- [J14] 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. DOI: [10.1016/j.nima.2013.08.063](https://doi.org/10.1016/j.nima.2013.08.063).
- [J15] 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. DOI: [10.1016/j.nima.2012.07.059](https://doi.org/10.1016/j.nima.2012.07.059). [Online]. Available: <https://doi.org/10.1016/j.nima.2012.07.059>.
- [J16] **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. DOI: [10.1088/0031-9155/57/20/6681](https://doi.org/10.1088/0031-9155/57/20/6681).
- [J17] 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. DOI: [10.1088/0031-9155/57/12/3793](https://doi.org/10.1088/0031-9155/57/12/3793).
- [J18] S. Pedemonte, **A. Bousse**, B. F. Hutton, S. Arridge, and S. Ourselin, “4-D generative model for PET/MRI reconstruction,” *Lecture Notes in Computer Science*, vol. 14, no. 1, pp. 581–588, 2011. DOI: [10.1007/978-3-642-23623-5\\_73](https://doi.org/10.1007/978-3-642-23623-5_73). [Online]. Available: [https://doi.org/10.1007/978-3-642-23623-5\\_73](https://doi.org/10.1007/978-3-642-23623-5_73).
- [J19] **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. DOI: [10.1109/TBME.2008.2005205](https://doi.org/10.1109/TBME.2008.2005205). [Online]. Available: <https://hal.archives-ouvertes.fr/inserm-00418315>.
- [J20] 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. DOI: [10.1109/TNS.2007.901200](https://doi.org/10.1109/TNS.2007.901200). [Online]. Available: <https://hal.archives-ouvertes.fr/inserm-00184255>.

## Domestic Peer-Reviewed Journal Papers

- [D1] **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. DOI: [10.1016/j.rbmret.2007.01.001](https://doi.org/10.1016/j.rbmret.2007.01.001).

## International 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] 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. DOI: [10.1109/NSSMIC.2018.8824557](https://doi.org/10.1109/NSSMIC.2018.8824557).
- [O4] 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. DOI: [10.1109/NSSMIC.2018.8824558](https://doi.org/10.1109/NSSMIC.2018.8824558).
- [O5] 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. DOI: [10.1109/NSSMIC.2017.8532765](https://doi.org/10.1109/NSSMIC.2017.8532765).
- [O6] **A. Bousse**, A. Sidlesky, N. Roth, A. Rashidasab, 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. DOI: [10.1109/NSSMIC.2016.8069448](https://doi.org/10.1109/NSSMIC.2016.8069448).
- [O7] **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.
- [O8] **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. DOI: [10.1007/978-3-319-18431-9\\_6](https://doi.org/10.1007/978-3-319-18431-9_6).
- [O9] 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. DOI: [10.1109/NSSMIC.2012.6551494](https://doi.org/10.1109/NSSMIC.2012.6551494).
- [O10] 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.

## International 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.
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