

Nicolas Dobigeon

Professeur des Universités
Univ. de Toulouse, IRIT/INP-ENSEEIH

IRIT/INP-ENSEEIH
2 rue Charles Camichel, B.P. 7122
31071 Toulouse Cedex 7, France

☎ (+33) (0) 5 34 32 22 40

FAX (+33) (0) 5 34 32 21 57

✉ nicolas.dobigeon@enseeiht.fr

🌐 <http://dobigeon.perso.enseeiht.fr/>

Emplois occupés

- Depuis 2016 **Professeur des Universités**
IRIT/INP-ENSEEIH, Université de Toulouse, France
- 2008–2016 **Maître de Conférences**
IRIT/INP-ENSEEIH, Université de Toulouse, France
- 2007–2008 **Chercheur post-doctoral**
Dept. of EECS, University of Michigan, Etats-Unis
- 2004–2007 **Allocataire de Recherche**
IRIT - Institut de Recherche en Informatique de Toulouse, France
- 2004–2007 **Moniteur de l'Education Nationale**
INP - Institut National Polytechnique de Toulouse, France

Parcours académique

- 2012 **Habilitation à Diriger les Recherches (HDR)**
INP - Institut National Polytechnique de Toulouse, France
- 2007 **Doctorat en "Signal, Image, Acoustique"**
INP - Institut National Polytechnique de Toulouse, France
- 2004 **D.E.A. (Master Recherche) en "Signal, Image, Acoustics"**
INP - Institut National Polytechnique de Toulouse, France
- 2004 **Diplôme Ingénieur ENSEEIH en "Electronique et Traitement du Signal"**
INP - ENSEEIH Toulouse, France

Principaux enseignements (≈ 250h eqTD/an)

Analyse complexe
Problèmes inverses en signal et image
Probabilités, Statistique
Traitement du Signal
Traitement Numérique du Signal

Principales responsabilités pédagogiques

- Depuis 2011 **Responsable de la spécialisation "Traitement du Signal et des Images" (TSI)**
3ième année, Dépt. "Electronique et Traitement du Signal", INP-ENSEEIH
- Depuis 2011 **Responsable de l'Unité d'Enseignement "Traitement du Signal"**
1ière année, Dépt. "Electronique et Traitement du Signal", INP-ENSEEIH
- 2010-2011 **Responsable du Module d'apprendissage "Traitement du signal et des images"**
2ième année, Dépt. "Electronique et Traitement du Signal", INP-ENSEEIH

Participation à des conseils d'établissement

- Depuis 2016 **Membre**, *Cellule de Veille Stratégique*, IRIT
- Depuis 2015 **Membre nommé**, *Conseil de l'École Doctorale EDSYS*, Correspondant pour l'INP Toulouse
- Depuis 2014 **Membre élu**, *Conseil Scientifique*, INP Toulouse
- Depuis 2011 **Membre élu**, *Conseil de Département "Electronique"*, INP-ENSEEIH

Services à la communauté

- Depuis 2014 **Affiliate member**, *Signal Processing Theory and Methods Technical Committee*
IEEE Signal Processing Society
- Depuis 2013 **Membre du Comité de Direction du GdR ISIS**
En charge du "Réseau des Doctorants"
- 2012-2016 **Membre nommé du Conseil National des Universités**
Section 61 - Génie informatique, Automatique et Traitement du Signal

Activités d'animation de la recherche

Organisation de journées, workshops et conférences

- 2016/04 **Co-organisateur**, *Réunion GdR ISIS*, Toulouse, France
"Imagerie hyperspectrale : quelles données ? quels traitements ? quelles applications ?"
- 2015/11 **Co-organisateur**, *Réunion GdR ISIS à destination des doctorants*, Paris, France
"Carrières en Signal, Image & Vision"
- 2014/11 **Co-organisateur**, *Réunion GdR ISIS*, Paris, France
"Problèmes inverses: approches myopes et aveugles, semi-et non-supervisées"
- 2013/10 **Co-organisateur**, *Réunion GdR ISIS à destination des doctorants*, Paris, France
"Carrières en Signal, Image & Vision"
- 2013/07 **Membre du comité local**, *CIMI Thematic Trimester on Image Processing*
Workshop on "Optimization and Statistics in Image Processing"
- 2011/02 **Co-organisateur**, *Réunion GdR ISIS*, Paris, France
"Contraintes de non-négativité en traitement du signal et des images"
- 2006/05 **Bénévole**, *Conférence internationale IEEE ICASSP 2006*, Toulouse, France

Organisation de sessions spéciales dans des conférences

- 2015/06 **IEEE WHISPERS**, "*Hyperspectral pansharpening and fusion*"
- 2013/09 **EUSIPCO**, "*Recent advances in spectral unmixing for hyperspectral imagery*"
- 2010/07 **MaxEnt**, "*Bayesian algorithms for multi-channel image analysis*"

Session chairs

- 2015/09 **EUSIPCO**, "*Image enhancement*"
- 2015/06 **IEEE WHISPERS**, "*Hyperspectral pansharpening and fusion*"
- 2013/07 **Workshop on "Optimization and Statistics in Image Processing"**, "*Bayesian methods*"
- 2010/07 **MaxEnt**, "*Bayesian algorithms for multi-channel image analysis*"
- 2009/08 **IEEE WHISPERS**, "*Recent Advances in Spectral Mixture Analysis of Hyperspectral Data*"

Travaux d'évaluation et d'expertise

Editorial Boards

- Depuis 2016 **Associate Editor**, *EURASIP Signal Processing*
2013-2014 **Associate Editor**, *The Scientific World Journal*, Probability and Statistics Area

Technical Program Committee (TPC)

- 2017/09 **Area Chair**, *EUSIPCO*, Kos, Grèce
2017/02 **TPC Member**, *LVA/ICA*, Grenoble, France
2015/09 **Area Chair**, *EUSIPCO*, Nice, France
2014/08 **TPC member**, *EUSIPCO*, Lisbonne, Portugal
2013/08 **TPC member**, *EUSIPCO*, Marrakech, Maroc
2012/08 **TPC member**, *EUSIPCO*, Bucharest, Roumanie

Evaluation de projets de recherche

Agence Nationale de la Recherche (ANR), France
Institut National des Sciences de l'Univers (CNRS INSU), France
Icelandic Research Fund (IRF), Iceland
Israel Science Foundation (ISF), Israel
Belgian Science Policy Office (BELSPO), Belgium
Research Foundation - Flanders (FWO), Belgium
Portuguese Foundation for Science and Technology (FCT), Portugal
National Council for Development and Innovation (UEFISCDI), Romania
Instituto de Telecomunicacoes (IT), Portugal
Grenoble Alpes Université (AGIR), France
University of Technology of Troyes (UTT), France

Activités de relecture

- Journals Nature Communications, IEEE Trans. Biomedical Engineering, IEEE Trans. Geoscience and Remote Sensing, IEEE Trans. Image Processing, IEEE Trans. Neural Networks & Learning Systems, IEEE Trans. Signal Processing, IEEE J. Sel. Topics Signal Processing, IEEE J. Sel. Topics Applied Earth Observations and Remote Sensing, IEEE J. Biomed. Health Informat. (formerly IEEE Trans. Inf. Technol. BioMed.), IEEE Signal Processing Magazine, IEEE Signal Processing Letters, IEEE Geoscience and Remote Sensing Letters, EURASIP Signal Processing, EURASIP Journal on Advances in Signal Processing, Journal of Signal Processing Systems (formerly VLSI), Recent Patents on Signal Processing, Journal of Electronic Imaging, Pattern Recognition Letters, Mathematical Reviews, SIAM Journal on Imaging Sciences, Computational Statistics and Data Analysis, Statistics and Computing, Journal of Applied Statistics, Journal of Global Optimization, Remote Sensing, International Journal of Digital Earth, Journal of Applied Meteorology and Climatology, Journal of Microscopy, Technometrics, AEU International Journal of Electronics and Communications, Ain Shams Engineering Journal, Traitement du Signal, Journal Européen des Systèmes Automatisés.
- Conferences AISTATS Conferences, NIPS Conferences, IEEE ICASSP Conferences, IEEE ISIE Symposiums, IEEE SSP Workshops, IEEE WHISPERS Workshops, EUSIPCO Conferences, LVA/ICA Conferences, MaxEnt Workshops, Colloques GRETSI

Comités de recrutement

- 2016/04 Univ. Claude Bernard, Lyon (membre extérieur)
- 2014/05 INP-ENSEEIH Toulouse (membre interne)
- 2013/05 INP-ENSEEIH Toulouse (membre interne)
- 2012/05 Université Joseph Fourier, Grenoble (membre extérieur)

Jurys de thèse

- 2016/12 Stéphanie Bernhardt, Supelec (examineur)
- 2016/09 Lin Nguyen, University of Lille (examineur)
- 2016/02 Muhammad Awais Akhter, University of Antwerp (external opponent)
- 2014/09 Cornelia Vacar, Univ. Bordeaux (rapporteur)
- 2013/11 Simon Henrot, Université de Nancy (examineur)
- 2013/03 Bertrand Coppa, Grenoble INP (rapporteur)

Diffusion et vulgarisation des connaissances

- 2012/03 **Orateur invité**, *K'es Kafé?*, IRIT, France
"Imagerie hyperspectrale: quand les pixels ont beaucoup de couleurs..."
- 2012/03 **Orateur invité & co-organisateur**, *Médiation Scientifique*, INP Toulouse, France
"Les mathématiques au service de la santé"
- 2011/11 **Interviews**, *sur nos résultats publiés dans PLoS Genetics*
"Pourquoi certaines personnes ne tombent pas malades de la grippe...", Communiqué de Presse.
"Un chercheur toulousain perce le mystère de la grippe", La Dépêche du Midi.
"Nous ne sommes pas tous égaux devant la grippe", Le Figaro.
"Grippe : Pourquoi certains l'attrapent et d'autres pas ?", Santé Magazine
"Pourquoi certaines personnes ne tombent pas malades de la grippe ?", Magazine Meilleure Santé.
- 2011/05 **Interview**, *"Science & Vie"*, dossier sur les statistiques Bayésiennes
"Une formule au coeur des enjeux scientifiques du siècle" (par F. Lassagne)
- 2006/11 **Co-organisateur & co-chairman**, *"Rencontres CNRS Jeunes"*, Toulouse, France

Cours en écoles thématiques

- 2015/02 Conférencier invité, Winter Shool "Search for Latent Variables: ICA, Tensors, and NMF", Villard-de-Lans, France,
"Bayesian fusion of multi-band images"
- 2012/06 Conférencier invité, École sur la reconstruction d'image, Fréjus, France,
"Algorithme MCMC pour le démixage linéaire d'images hyperspectrales"
- 2006/11 Conférencier invité, École d'Été CNRS "Traitement d'image", Figeac, France,
"MCMC methods for image processing applications" (avec J.-Y. Tourneret)

Doctorants encadrés

- Depuis 2016 **Adrien Lagrange**, *INP Toulouse*, co-encadré avec M. Fauvel
"Multi-scale analysis of hyperspectral and hypertemporal images"
- Depuis 2016 **Etienne Monier**, *INP Toulouse*, co-encadré avec T. Oberlin
"Adaptive sampling and reconstruction of hyperspectral images"
- Depuis 2015 **Vinicius Ferraris**, *INP Toulouse*, co-encadré avec M. Chabert
"Détection de changements pour des images issues de capteurs hétérogènes"

- Depuis 2015 **Yanna Cruz Cavalcanti**, *INP Toulouse*, co-encadrée avec C. Tauber et T. Oberlin
 “Démélange d’images TEP dynamiques”
- Depuis 2014 **Clément Elvira**, *Université de Lille*, co-encadré avec P. Chainais
 “Méthodes bayésiennes non-paramétriques pour le démélange d’images hyperspectrales”
- Depuis 2014 **Jessica Sodjo**, *Université de Bordeaux*, co-encadré avec J.-F. Giovannelli et A. Giremus
 “Méthodes bayésiennes non-paramétriques pour la déconvolution d’image”
- Depuis 2014 **Pierre-Antoine Thouvenin**, *INP Toulouse*, co-encadré avec J.-Y. Tourneret
 “Variabilités spectrale et temporelles en imagerie hyperspectrale”
- 2012-2015 **Qi Wei**, *INP Toulouse*, co-encadré avec J.-Y. Tourneret
 “Bayesian fusion of multi-band images”
- 2010-2013 **Yoann Altmann**, *INP Toulouse*, co-encadré avec J.-Y. Tourneret
 “Démélange non-linéaire d’images hyperspectrales”
- 2009-2013 **Cécile Bazot**, *INP Toulouse*, co-encadrée avec J.-Y. Tourneret
 “Méthodes bayésiennes pour l’analyse génétique”
- 2007-2010 **Olivier Eches**, *INP Toulouse*, co-encadré avec J.-Y. Tourneret
 “Méthodes bayésiennes pour le démélange d’images hyperspectrales”

Post-doctorants encadrées

- Depuis 2017 **Tatsumi Uezato**, *INP Toulouse*, co-encadré avec M. Fauvel
- 2015-2016 **Shaheera Rashwan**, *City of Scientific Research and Technology Applications (Egypt)*
- 2013-2014 **Abderrahim Halimi**, *INP Toulouse*, co-encadré avec J.-Y. Tourneret

Projets de Recherche

- 2017-2019 **Projet ANR**
 “MULTIFRACS - Multifractal theory and methods for large size multivariate systems - Applications to scale free analysis of brain dynamics analysis”,
 Partenaires : ENS Lyon, LAMA (Univ. Paris-Est Créteil) et CEA-Neurospin
- 2016-2019 **CNES/Région Occitanie**
 “DEPICT - From pixelwise unmixing to thematic classification”,
 Partenaires : CNES et Dynafor (INRA/INP Toulouse)
- 2016-2019 **ERANETMED JC-WATER program, EU FP7**
 “MapInvPlnt - Monitoring the Water Hyacinth Using Hyperspectral Imagery”,
 Partenaires : MuCSAT (Alexandria, Egypt), NARSS (Cairo, Egypt), IT (Lisboa, Portugal)
- 2015-2018 **Actions Thématiques Stratégiques, IDEX Toulouse**
 “MUESLI - Multiscale mapping of ecosystem services by very high spatial resolution hyperspectral and LiDAR remote sensing imagery”,
 Partenaires : Dynafor (INRA/INP Toulouse), CESBIO (CNRS/CNES/IRD/UPS)
- 2013-2017 **Projet ANR**
 “BNPSI - Bayesian nonparametric methods for signal and image processing”,
 Partenaires : LAGIS (Université de Lille), INRIA Bordeaux, IMS Lab. (Université de Bordeaux) et CEA-LIST
- 2012-2015 **Projet ANR**
 “Hypanema - Algorithmes de démélange nonlinéaire pour l’analyse de données hyperspectrales”,
 Partenaires : Lagrange Lab. (University of Nice), GIPSA-lab (Grenoble INP) et SMTR (Université Technologique de Troyes)
- 2011-2012 **Projet PEPS-Rupture, CNRS INS2I**
 “ESTOMAT - Estimation de l’ordre dans les modèles à factorisation matricielle”,
 Partenaire : Cédric Févotte (CNRS/LTCI, Telecom ParisTech, France)

- 2010-2011 **Projet BQR, INP Toulouse**
 “MADONNA - Mission d’Acquisition de DONNées hyperspectrales et lidar par capteurs Aéroportés”,
 Partenaires : DYNAFOR (INRA/INP, France), Purpan EI (France)
- 2007-2008 **Projet “Jeunes Chercheurs”, GdR-ISIS**
 “Méthodes MCMC pour l’analyse d’images hyperspectrales”,
 Partenaires : Équipe ADTSI, IRCCyN (CNRS/ECN, France)

Partenariats industriels

- 2016-2017 **CNES**, “Débruitage d’images hyperspectrales”
- 2013-2014 **CNES**, “Détection de mélanges non-linéaires dans les images hyperspectrales”
- 2011-2012 **CNES**, “Apprentissage de dictionnaire pour l’analyse d’images de télédétection”
- 2012 **CLS/CNES**, “Algorithmes complémentaires de reconstruction des données MADRAS”
- 2012 **CLS/CNES**, “Algorithmes de reconstruction des données MADRAS”
- 2009-2010 **CNES**, “Désentrelacement des mesures TDOA et FDOA”

Prix, soutiens et distinctions

- 2015 Finalist, Student Paper Contest (for Qi Wei), IEEE CAMSAP 2015.
- 2014 Highly Cited Paper, Web of Science
- 2014 Top 10% Paper Award, IEEE ICIP
- 2013 IEEE Senior Member
- 2013 Best Paper Award, IEEE WHISPERS
- 2012 Highly Cited Paper, Web of Science
- 2011 Best Reviewer Award, IEEE Geosci. Remote Sensing Letters
- 2011-2015 Titulaire, Prime d’Excellence Scientifique
- 2009 Finaliste, Prix de Thèse ASTI 2009
- 2007-2008 Bourse post-doctorale du Ministère de la Défense
- 2007 Prix de Thèse Léopold Escande
- 2007/08 Workshop Travel Grant, IEEE SSP 2007
- 2007/04 Finaliste du Student Paper Contest, IEEE ICASSP 2007
- 2005/07 Action Doctorants financée par le GdR-ISIS
- 2004-2007 Allocation de recherche du Ministère de l’Éducation Nationale

Affiliations

- Depuis 2008 Membre du laboratoire IRIT, Equipe Signal et Communications
 Membre Académique du laboratoire coopératif TéSA
 Membre du Centre de Compétences Techniques CNES “Traitement du Signal et des Images”
- Depuis 2005 Membre de la IEEE Signal Processing Society
 Membre de la IEEE Geoscience & Remote Sensing Society
- Depuis 2004 Membre du groupe de recherche GdR-ISIS

Séminaires et exposés invités

- 2016/11 **Invited talk**, *Chemometrics and Statistics in Image Analysis*, Institut Henri Poincaré (IHP), Paris, France,
 “Spectral Mixture Analysis - Beyond the Linear Mixing Model”

- 2015/11 **Seminar**, *CCT CNES TSI*, IAS, Toulouse, France,
"A short tutorial on Bayesian methods"
- 2014/12 **Séminaire**, *Séminaires Signal & Image*, Lille, France
"Bayesian fusion of multiple images - Beyond pansharpening"
- 2014/04 **Exposé invité**, *Symposium on Hyperspectral Imaging in Research and Engineering (SHIRE 2014)*, Sheffield, UK,
"Bayesian linear unmixing for spectral mixture analysis - Application to hyperspectral imagery"
- 2013/04 **Exposé invité**, "*Signal & Image Processing*" *CNES Technical Chapter*, IAS, Toulouse, France,
"Démélange (non-)linéaire d'images hyperspectrales"
- 2012/12 **Séminaire**, *Séminaires Problèmes Inverses*, Bordeaux, France
"Bayesian approaches for subspace estimation"
- 2011/12 **Exposé invité**, *International PICS 2012 Workshop on Chemometrics in time-resolved and imaging spectroscopy - Instrumental measurements and data analysis*, Lille, France
"Bayesian linear unmixing for spectral mixture analysis"
- 2011/07 **Exposé**, *Journée GdR-ISIS "Imagerie multi/hyperspectrale : problématiques et nouveaux domaines d'applications"*, TelecomParisTech, Paris, France
"Détection de mélanges non-linéaires pour l'analyse d'images hyperspectrales" (par Yoann Altmann)
- 2012/01 **Séminaire**, *Groupe de Travail Image*, IMT, University of Toulouse, France
"(Non-)linear unmixing of hyperspectral images"
- 2011/12 **Exposé invité**, *Atelier "Astrostatistique en France"*, Grenoble, France
"MCMC algorithms for spectral unmixing"
- 2011/11 **Exposé invité**, *Journée GdR-ISIS "Méthodes de Monte Carlo pour les problèmes inverses bayésiens"*, TelecomParisTech, Paris, France
"MCMC algorithms for spectral unmixing"
- 2011/03 **Séminaire**, LPS Laboratory, Université Paris-Sud 11, France
"Bayesian linear unmixing for spectral mixture analysis"
- 2011/02 **Exposé**, *Journée GdR-ISIS "Contraintes de non-négativité en traitement du signal et des images"*, TelecomParisTech, Paris, France
"Simulation bayésienne pour la séparation de sources non-négatives" (par Said Moussaoui)
- 2010/12 **Séminaire**, Université de Pau, France
"Algorithmes bayésiens pour le démelange supervisé, semi-supervisé et non-supervisé d'images hyperspectrales"
- 2011/03 **Exposé**, *Journée "Mathématiques pour l'Ingénierie : de la Modélisation à la Résolution de Problèmes Concrets"*, INP-ENSEEIH, Toulouse, France
"Reconstruction bayésienne d'images parcimonieuses. Application à l'imagerie MRFM"
- 2010/03 **Séminaire**, Supélec, Gif-sur-Yvette, France
"Méthodes MCMC pour l'analyse d'images hyperspectrales"
- 2009/05 **Exposé**, *Assemblée Générale du GdR ISIS*, Batz-sur-mer, France
"Méthodes MCMC pour l'analyse d'images hyperspectrales"
- 2009/03 **Exposé**, *Journée GdR-ISIS "Problèmes inverses - Estimation des hyperparamètres"*, TelecomParisTech, Paris, France
"Reconstruction bayésienne d'images MRFM parcimonieuses"
- 2009/03 **Exposé**, *Journée GdR-ISIS "Modèle stochastique multivarié en traitement des images"*, TelecomParisTech, Paris, France
"Extraction de composants purs et démelange linéaire bayésien en imagerie hyperspectrale"
- 2008/07 **Exposé invité**, *Workshop on change-point detection methods and applications*, AgroParisTech, Paris, France
"Joint segmentation of wind speed and direction using a hierarchical model"
- 2008/07 **Exposé invité**, *ARO-MURI MRFM Program Progress Review*, Cornell University, Ithaca, USA
"Sparsity constrained image reconstruction for MRFM" (par Alfred O. Hero)

- 2008/04 **Séminaire**, GIPSA-lab, Grenoble, France
 “Segmentation conjointe de signaux multi-capteurs par échantillonnage bayésien”
- 2006/12 **Séminaire**, IRCCyN Lab., Nantes, France
 “Un modèle bayésien hiérarchique pour la segmentation conjointe de séries astronomiques”
- 2005/04 **Exposé**, *Colloque EDIT*, Toulouse, France
 “Segmentation conjointe de données astrophysiques”

Production scientifique

Tableau synthétique de la production scientifique

	total		2017	2016	2015	2014	2013	2012	2011	≤ 2010
revue internationale	51	=	1	7	8	7	5	8	4	11
revue nationale	1	=								1
chapitre d'ouvrage	3	=		2			1			
conférence internationale	82	=		6	8	10	5	7	20	27
conférence nationale	14	=			2		1	1	5	5
brevets	1	=					1			

Indicateurs bibliométriques, Source : *Google Scholar*, Novembre 2016

Citations : 3406

H-index : 28

Liste complète des publications

Articles soumis

- [JS1] P.-A. Thouvenin, N. Dobigeon, and J.-Y. Tourneret, “Robust unmixing of multitemporal hyperspectral images,” submitted. [Online]. Available: <http://arxiv.org/abs/1609.07792/>
- [JS2] V. Ferraris, N. Dobigeon, Q. Wei, and M. Chabert, “Robust fusion of multi-band images with different spatial and spectral resolutions for change detection,” submitted. [Online]. Available: <http://arxiv.org/abs/1609.06076/>
- [JS3] S. Rashwan and N. Dobigeon, “A split-and-merge approach for hyperspectral band selection,” submitted.
- [JS4] V. Ferraris, N. Dobigeon, Q. Wei, and M. Chabert, “Detecting changes between optical images of different spatial and spectral resolutions: a fusion-based approach,” submitted. [Online]. Available: <http://arxiv.org/abs/1609.06074/>
- [JS5] J. Frecon, N. Pustelnik, N. Dobigeon, H. Wendt, and P. Abry, “Bayesian selection for the regularization parameter in tv_{ℓ_0} denoising problems,” submitted. [Online]. Available: <http://arxiv.org/abs/1608.07739/>
- [JS6] S. Rashwan, W. Sheta, and N. Dobigeon, “Spectral weighted image fusion using nature-inspired algorithms,” submitted.
- [JS7] C. Elvira, P. Chainais, and N. Dobigeon, “Bayesian anti-sparse coding,” submitted. [Online]. Available: <http://arxiv.org/abs/1512.06086/>
- [JS8] Q. Wei, J. M. Bioucas-Dias, N. Dobigeon, and J.-Y. Tourneret, “Fast spectral unmixing based on Dykstra’s alternating projection,” submitted. [Online]. Available: <http://arxiv.org/abs/1505.01740/>

Articles de journaux internationaux

- [JI1] A. Halimi, J. Bioucas-Dias, N. Dobigeon, G. S. Bullet, and S. McLaughlin, “Fast hyperspectral unmixing in presence of nonlinearity or mismodelling effects,” *IEEE Trans. Computational Imaging*, 2017, to appear. [Online]. Available: <http://arxiv.org/abs/1607.05336/>
- [JI2] Q. Wei, J. M. Bioucas-Dias, N. Dobigeon, J.-Y. Tourneret, M. Chen, and S. Godsill, “Multi-band image fusion based on spectral unmixing,” *IEEE Trans. Geoscience and Remote Sensing*, vol. 54, no. 12, pp. 7236–7249, Dec. 2016.

- [JI3] N. Pustelnik, H. Wendt, P. Abry, and N. Dobigeon, "Combining local regularity estimation and total variation optimization for scale-free texture segmentation," *IEEE Trans. Computational Imaging*, vol. 4, no. 2, pp. 468–479, Dec. 2016.
- [JI4] Q. Wei, N. Dobigeon, J.-Y. Tourneret, J. M. Bioucas-Dias, and S. Godsill, "R-FUSE: Robust fast fusion of multi-band images based on solving a Sylvester equation," *IEEE Signal Processing Letters*, vol. 23, no. 11, pp. 1632–1636, Nov. 2016.
- [JI5] P.-A. Thouvenin, N. Dobigeon, and J.-Y. Tourneret, "Online unmixing of multitemporal hyperspectral images accounting for spectral variability," *IEEE Trans. Image Processing*, vol. 25, no. 9, pp. 3979–3990, Sept. 2016.
- [JI6] N. Zhao, Q. Wei, A. Basarab, N. Dobigeon, D. Kouamé, and J.-Y. Tourneret, "Fast single image super-resolution using a new analytical solution for $\ell_2 - \ell_2$ problems," *IEEE Trans. Image Processing*, vol. 25, no. 8, pp. 3683–3697, Aug. 2016.
- [JI7] H. Wendt, N. Dobigeon, J.-Y. Tourneret, M. Albinet, C. Goldstein, and N. Karouche, "Detection and correction of glitches in a multiplexed multi-channel data stream – application to the madras instrument," *IEEE Trans. Geoscience and Remote Sensing*, vol. 54, no. 5, pp. 2803–2811, May 2016.
- [JI8] P.-A. Thouvenin, N. Dobigeon, and J.-Y. Tourneret, "Hyperspectral unmixing with spectral variability using a perturbed linear mixing model," *IEEE Trans. Signal Processing*, vol. 64, no. 2, pp. 525–538, Feb. 2016.
- [JI9] A. Halimi, N. Dobigeon, and J.-Y. Tourneret, "Unsupervised unmixing of hyperspectral images accounting for endmember variability," *IEEE Trans. Image Processing*, vol. 24, no. 12, pp. 4904–4917, Dec. 2015.
- [JI10] C. Févotte and N. Dobigeon, "Nonlinear hyperspectral unmixing with robust nonnegative matrix factorization," *IEEE Trans. Image Processing*, vol. 24, no. 12, pp. 4810–4819, Dec. 2015.
- [JI11] Q. Wei, N. Dobigeon, and J.-Y. Tourneret, "Fast fusion of multi-band images based on solving a Sylvester equation," *IEEE Trans. Image Processing*, vol. 24, no. 11, pp. 4109–4121, Nov. 2015.
- [JI12] L. Loncan, L. B. Almeida, J. M. Bioucas-Dias, X. Briottet, J. Chanussot, N. Dobigeon, S. Fabre, W. Liao, G. Licciardi, M. Simoes, J.-Y. Tourneret, M. Veganzones, G. Vivone, Q. Wei, and N. Yokoya, "Hyperspectral pansharpening: a review," *IEEE Geoscience and Remote Sensing Magazine*, vol. 3, no. 3, pp. 27–46, Sept. 2015.
- [JI13] S. Combrexelle, H. Wendt, N. Dobigeon, J.-Y. Tourneret, S. McLaughlin, and P. Abry, "Bayesian estimation of the multifractality parameter for image texture using a Whittle approximation," *IEEE Trans. Image Processing*, vol. 24, no. 8, pp. 2540–2551, Aug. 2015.
- [JI14] Q. Wei, N. Dobigeon, and J.-Y. Tourneret, "Bayesian fusion of multi-band images," *IEEE J. Sel. Topics Signal Processing*, vol. 9, no. 6, pp. 1117–1127, Sept. 2015.
- [JI15] Q. Wei, J. M. Bioucas-Dias, N. Dobigeon, and J.-Y. Tourneret, "Hyperspectral and multispectral image fusion based on a sparse representation," *IEEE Trans. Geoscience and Remote Sensing*, vol. 53, no. 17, pp. 3658–3668, Jul. 2015.
- [JI16] O. Chabiron, F. Malgouyres, J.-Y. Tourneret, and N. Dobigeon, "Toward fast transform learning," *Int. J. Comp. Vision*, vol. 114, no. 2, pp. 195–216, Sept. 2015.
- [JI17] N. Dobigeon, L. Tits, B. Somers, Y. Altmann, and P. Coppin, "A comparison of nonlinear mixing models for vegetated areas using simulated and real hyperspectral data," *IEEE J. Sel. Topics Appl. Earth Observations Remote Sensing*, vol. 7, no. 6, pp. 1869–1878, June 2014.
- [JI18] Y. Altmann, N. Dobigeon, and J.-Y. Tourneret, "Unsupervised post-nonlinear unmixing of hyperspectral images using a Hamiltonian Monte Carlo algorithm," *IEEE Trans. Image Processing*, vol. 23, no. 6, pp. 2663–2675, June 2014.
- [JI19] Y. Altmann, N. Dobigeon, S. McLaughlin, and J.-Y. Tourneret, "Residual component analysis of hyperspectral images – Application to joint nonlinear unmixing and nonlinearity detection," *IEEE Trans. Image Processing*, vol. 23, no. 5, pp. 2148–2158, June 2014.
- [JI20] O. Besson, N. Dobigeon, and J.-Y. Tourneret, "Joint Bayesian estimation of close subspaces from noisy measurements," *IEEE Signal Processing Letters*, vol. 21, no. 2, pp. 168–171, Feb. 2014.
- [JI21] N. Dobigeon, J.-Y. Tourneret, C. Richard, J. C. M. Bermudez, S. McLaughlin, and A. O. Hero, "Non-linear unmixing of hyperspectral images: Models and algorithms," *IEEE Signal Processing Magazine*, vol. 31, no. 1, pp. 82–94, Jan. 2014.

- [JI22] M. Pereyra, N. Dobigeon, H. Batatia, and J.-Y. Tournet, "Computing the Cramer-Rao bound of Markov random field parameters: Application to the Ising and the Potts models," *IEEE Signal Processing Letters*, vol. 21, no. 1, pp. 47–50, Jan. 2014.
- [JI23] S.-U. Park, N. Dobigeon, and A. O. Hero, "Variational semi-blind sparse deconvolution with orthogonal kernel bases and its application to MRFM," *Signal Processing*, 2013, to appear.
- [JI24] M. Pereyra, N. Dobigeon, H. Batatia, and J.-Y. Tournet, "Estimating the granularity coefficient of a Potts-Markov random field within an MCMC algorithm," *IEEE Trans. Image Processing*, vol. 22, no. 6, pp. 2385–2397, June 2013.
- [JI25] C. Bazot, N. Dobigeon, J.-Y. Tournet, A. K. Zaas, G. S. Ginsburg, and A. O. Hero, "Unsupervised Bayesian linear unmixing of gene expression microarrays," *BMC Bioinformatics*, vol. 14, no. 99, March 2013.
- [JI26] Y. Altmann, N. Dobigeon, S. McLaughlin, and J.-Y. Tournet, "Nonlinear spectral unmixing of hyperspectral images using Gaussian processes," *IEEE Trans. Signal Processing*, vol. 61, no. 10, pp. 2442–2453, May 2013.
- [JI27] Y. Altmann, N. Dobigeon, and J.-Y. Tournet, "Nonlinearity detection in hyperspectral images using a polynomial post-nonlinear mixing model," *IEEE Trans. Image Processing*, vol. 22, no. 4, pp. 1267–1276, Apr. 2013.
- [JI28] O. Eches, J. A. Benediktsson, N. Dobigeon, and J.-Y. Tournet, "Adaptive Markov random fields for joint unmixing and segmentation of hyperspectral image," *IEEE Trans. Image Processing*, vol. 22, no. 1, pp. 5–16, Jan. 2013.
- [JI29] S. U. Park, N. Dobigeon, and A. O. Hero, "Semi-blind sparse image reconstruction with application to MRFM," *IEEE Trans. Image Processing*, vol. 21, no. 9, pp. 3838–3849, Sept. 2012.
- [JI30] N. Dobigeon and N. Brun, "Spectral mixture analysis of EELS spectrum-images," *Ultramicroscopy*, vol. 120, pp. 25–34, Sept. 2012.
- [JI31] O. Besson, N. Dobigeon, and J.-Y. Tournet, "CS decomposition based Bayesian subspace estimation," *IEEE Trans. Signal Processing*, vol. 60, no. 8, pp. 4210–4218, Aug. 2012.
- [JI32] M. Pereyra, N. Dobigeon, H. Batatia, and J.-Y. Tournet, "Segmentation of skin lesions in 2d and 3d ultrasound images using a spatially coherent generalized Rayleigh mixture model," *IEEE Trans. Med. Imaging*, vol. 31, no. 8, pp. 1509–1520, Aug. 2012.
- [JI33] G. Kail, J.-Y. Tournet, F. Hlawatsch, and N. Dobigeon, "Blind deconvolution of sparse pulse sequences under a minimum distance constraint: a partially collapsed Gibbs sampler method," *IEEE Trans. Signal Processing*, vol. 60, no. 6, pp. 2727–2743, June 2012.
- [JI34] Y. Altmann, A. Halimi, N. Dobigeon, and J.-Y. Tournet, "Supervised nonlinear spectral unmixing using a post-nonlinear mixing model for hyperspectral imagery," *IEEE Trans. Image Processing*, vol. 21, no. 6, pp. 3017–3025, June 2012.
- [JI35] J. M. Bioucas-Dias, A. Plaza, N. Dobigeon, M. Parente, Q. Du, P. Gader, and J. Chanussot, "Hyperspectral unmixing overview: Geometrical, statistical, and sparse regression-based approaches," *IEEE J. Sel. Topics Appl. Earth Observations Remote Sensing*, vol. 5, no. 2, pp. 354–379, Apr. 2012.
- [JI36] R. Mittelman, N. Dobigeon, and A. O. Hero, "Hyperspectral image unmixing using a multiresolution sticky HDP," *IEEE Trans. Signal Processing*, vol. 60, no. 4, pp. 1656–1671, Apr. 2012.
- [JI37] O. Besson, N. Dobigeon, and J.-Y. Tournet, "Minimum mean square distance estimation of a subspace," *IEEE Trans. Signal Processing*, vol. 59, no. 12, pp. 5709–5720, Dec. 2011.
- [JI38] O. Eches, N. Dobigeon, and J.-Y. Tournet, "Enhancing hyperspectral image unmixing with spatial correlations," *IEEE Trans. Geoscience and Remote Sensing*, vol. 49, no. 11, pp. 4239–4247, Nov. 2011.
- [JI39] A. Halimi, Y. Altmann, N. Dobigeon, and J.-Y. Tournet, "Nonlinear unmixing of hyperspectral images using a generalized bilinear model," *IEEE Trans. Geoscience and Remote Sensing*, vol. 49, no. 11, pp. 4153–4162, Nov. 2011.
- [JI40] Y. Huang, A. K. Zaas, A. Rao, N. Dobigeon, P. J. Woolf, T. Veldman, N. C. Oien, M. T. McClain, J. B. Varkey, B. Nicholson, L. Carin, S. Kingsmore, C. W. Woods, G. S. Ginsburg, and A. Hero, "Temporal dynamics of host molecular responses differentiate symptomatic and asymptomatic influenza A infection," *PLoS Genetics*, vol. 8, no. 7, p. e1002234, Aug. 2011.

- [JI41] F. Schmidt, M. Guiheneuf, S. Moussaoui, E. Tréguier, A. Schmidt, and N. Dobigeon, "Implementation strategies for hyperspectral unmixing using Bayesian source separation," *IEEE Trans. Geoscience and Remote Sensing*, vol. 48, no. 11, pp. 4003–4013, Nov. 2010.
- [JI42] O. Eches, N. Dobigeon, and J.-Y. Tournet, "Estimating the number of endmembers in hyperspectral images using the normal compositional model and a hierarchical Bayesian algorithm," *IEEE J. Sel. Topics Signal Processing*, vol. 4, no. 3, pp. 582–591, June 2010.
- [JI43] O. Eches, N. Dobigeon, C. Mailhes, and J.-Y. Tournet, "Bayesian estimation of linear mixtures using the normal compositional model. application to hyperspectral imagery," *IEEE Trans. Image Processing*, vol. 19, no. 6, pp. 1403–1413, June 2010.
- [JI44] N. Dobigeon and J.-Y. Tournet, "Bayesian orthogonal component analysis for sparse representation," *IEEE Trans. Signal Processing*, vol. 58, no. 5, pp. 2675–2685, May 2010.
- [JI45] N. Dobigeon, S. Moussaoui, J.-Y. Tournet, and C. Carteret, "Bayesian separation of spectral sources under non-negativity and full additivity constraints," *Signal Processing*, vol. 89, no. 12, pp. 2657–2669, Dec. 2009.
- [JI46] N. Dobigeon, S. Moussaoui, M. Coulon, J.-Y. Tournet, and A. O. Hero, "Joint Bayesian endmember extraction and linear unmixing for hyperspectral imagery," *IEEE Trans. Signal Processing*, vol. 57, no. 11, pp. 4355–4368, Nov. 2009.
- [JI47] N. Dobigeon, A. O. Hero, and J.-Y. Tournet, "Hierarchical Bayesian sparse image reconstruction with application to MRFM," *IEEE Trans. Image Processing*, vol. 18, no. 9, pp. 2059–2070, Sept. 2009.
- [JI48] N. Dobigeon, J.-Y. Tournet, and C.-I. Chang, "Semi-supervised linear spectral unmixing using a hierarchical Bayesian model for hyperspectral imagery," *IEEE Trans. Signal Processing*, vol. 56, no. 7, pp. 2684–2695, Jul. 2008.
- [JI49] N. Dobigeon and J.-Y. Tournet, "Joint segmentation of wind speed and direction using a hierarchical model," *Computational Statistics and Data Analysis*, vol. 51, no. 12, pp. 5603–5621, Aug. 2007.
- [JI50] N. Dobigeon, J.-Y. Tournet, and M. Davy, "Joint segmentation of piecewise constant autoregressive processes by using a hierarchical model and a Bayesian sampling approach," *IEEE Trans. Signal Processing*, vol. 55, no. 4, pp. 1251–1263, April 2007.
- [JI51] N. Dobigeon, J.-Y. Tournet, and J. D. Scargle, "Joint segmentation of multivariate astronomical time series: Bayesian sampling with a hierarchical model," *IEEE Trans. Signal Processing*, vol. 55, no. 2, pp. 414–423, Feb. 2007.

Articles de journaux nationaux

- [JN1] N. Dobigeon, S. Moussaoui, M. Coulon, J.-Y. Tournet, and A. O. Hero, "Algorithmes bayésiens pour le démixage supervisé, semi-supervisé et non-supervisé images hyperspectrales," *Traitement du signal*, vol. 27, no. 1, pp. 79–108, Aug. 2010, invited paper.

Participation à des ouvrages

- [Ch1] S. Moussaoui, L. T. Duarte, N. Dobigeon, and C. Jutten, "Bayesian source separation," in *Source separation in physical-chemical sensing*, ser. Electronics & Communications Engineering Series, C. Jutten, S. Moussaoui, and L.-T. Duarte, Eds. U.K.: John Wiley & Sons, 2016, to appear.
- [Ch2] N. Dobigeon, Y. Altmann, N. Brun, and S. Moussaoui, "Linear and nonlinear unmixing in hyperspectral imaging," in *Resolving spectral mixtures – With application from ultrafast time-resolved spectroscopy to superresolution imaging*, ser. Data Handling in Science and Technology, C. Ruckebusch, Ed. Oxford, U.K.: Elsevier, 2016, vol. 30, pp. 185–224.
- [Ch3] N. Dobigeon, S. Moussaoui, M. Coulon, J.-Y. Tournet, and A. O. Hero, "MCMC algorithms for supervised and unsupervised linear unmixing of hyperspectral images," in *New Concepts in Imaging: Optical and Statistical Models*, ser. EAS Publications Series, D. Mary, C. Theys, and C. Aime, Eds. Les Ulis, France: EDP Sciences, 2013, vol. 59, pp. 381–401.

Articles de conférences internationales

- [CI1] Q. Wei, J. M. Bioucas-Dias, N. Dobigeon, J.-Y. Tournet, and S. Godsill, "Blind model-based fusion of multi-band and panchromatic images," in *IEEE Int. Conf. Multisensor Fusion Integration Intell. Syst. (MFI)*, Baden-Baden, Germany, July 2016.
- [CI2] Y. Altmann, N. Brun, N. Dobigeon, K. March, S. Moussaoui, and O. Schneegans, "Hyperspectral EELS image unmixing," in *IASIM Conference in Spectral Imaging*, Chamonix, France, July 2016.

- [CI3] Q. Wei, S. Godsill, J. M. Bioucas-Dias, N. Dobigeon, and J.-Y. Tournet, "High-resolution hyperspectral image fusion based on spectral unmixing," in *IEEE Int. Conf. Info. Fusion (FUSION)*, Heidelberg, Germany, July 2016, pp. 1714–1719.
- [CI4] J. Sodjo, A. Giremus, F. Caron, J.-F. Giovannelli, and N. Dobigeon, "Joint segmentation of multiple images with shared classes: a Bayesian nonparametrics approach," in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Palma de Mallorca, Spain, June 2016, pp. 1–5.
- [CI5] C. Elvira, P. Chainais, and N. Dobigeon, "Democratic prior for anti-sparse coding," in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Palma de Mallorca, Spain, June 2016, pp. 1–5.
- [CI6] P.-A. Thouvenin, N. Dobigeon, and J.-Y. Tournet, "Unmixing multitemporal hyperspectral images with variability: an online algorithm," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Shanghai, China, March 2016, pp. 3351–3355.
- [CI7] Q. Wei, N. Dobigeon, and J.-Y. Tournet, "Fuse: a fast multi-band image fusion algorithm," in *Proc. IEEE Int. Workshop Comput. Adv. in Multi-Sensor Adaptive Process. (CAMSAP)*, Cancun, Mexico, Dec. 2015, pp. 161–164.
- [CI8] A. Halimi, N. Dobigeon, J.-Y. Tournet, S. McLaughlin, and P. Honeine, "Unmixing multitemporal hyperspectral images accounting for endmember variability," in *Proc. European Signal Processing Conf. (EUSIPCO)*, Nice, France, Sept. 2015, pp. 1686–1690.
- [CI9] P.-A. Thouvenin, N. Dobigeon, and J.-Y. Tournet, "A perturbed linear mixing model accounting for spectral variability," in *Proc. European Signal Processing Conf. (EUSIPCO)*, Nice, France, Sept. 2015, pp. 819–823.
- [CI10] Q. Wei and N. Dobigeon, "Bayesian fusion of multispectral and hyperspectral images using a block coordinate descent method," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Tokyo, Japan, 2015.
- [CI11] A. Halimi, N. Dobigeon, J.-Y. Tournet, and P. Honeine, "Hyperspectral unmixing accounting for spatial correlations and endmember variability," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Tokyo, Japan, 2015.
- [CI12] —, "A new Bayesian unmixing algorithm for hyperspectral images mitigating endmember variability," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Brisbane, Australia, Apr. 2015, pp. 2469–2473.
- [CI13] S. Combexelle, H. Wendt, P. Abry, N. Dobigeon, J.-Y. Tournet, and S. McLaughlin, "A Bayesian approach for the joint estimation of the multifractality parameter and integral scale based on the Whittle approximation," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Brisbane, Australia, Apr. 2015, pp. 3886–3890.
- [CI14] N. Pustelnik, P. Abry, H. Wendt, and N. Dobigeon, "Inverse problem formulation for regularity estimation in images," in *IEEE Int. Conf. Image Processing (ICIP)*, Paris, France, 2014, top 10% paper award.
- [CI15] Q. Wei, N. Dobigeon, and J.-Y. Tournet, "Bayesian fusion of multispectral and hyperspectral images with unknown sensor spectral response," in *IEEE Int. Conf. Image Processing (ICIP)*, Paris, France, 2014, invited paper.
- [CI16] J. Frecon, N. Pustelnik, N. Dobigeon, H. Wendt, and P. Abry, "Hybrid bayesian variational strategy to address parameter selection issue in tv signal denoising," in *European Signal Processing Conf. (EUSIPCO)*, Lisbon, Portugal, 2014.
- [CI17] Q. Wei, J. M. Bioucas-Dias, N. Dobigeon, and J.-Y. Tournet, "Fusion of hyperspectral and multispectral images using dictionary learning," in *European Signal Processing Conf. (EUSIPCO)*, Lisbon, Portugal, 2014, invited paper.
- [CI18] O. Chabiron, F. Malgouyres, J.-Y. Tournet, and N. Dobigeon, "Learning a fast transform with a dictionary," in *Int. Traveling Workshop Interactions between Sparse models and Technology (iTWIST)*, Namur, Belgium, Aug. 2014.
- [CI19] Y. Altmann, S. McLaughlin, and N. Dobigeon, "Sampling from a multivariate gaussian distribution truncated on a simplex: a review," in *IEEE Workshop on Statistical Signal Processing (SSP)*, Gold Coast, Australia, July 2014, invited paper.
- [CI20] N. Dobigeon, L. Tits, B. Somers, Y. Altmann, and P. Coppin, "Nonlinear unmixing of vegetated areas: a model comparison based on simulated and real hyperspectral data," in *IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Lausanne, Switzerland, June 2014, invited paper.

- [CI21] Y. Altmann, N. Dobigeon, J.-Y. Tournet, and S. McLaughlin, "Residual component analysis of hyperspectral images for joint nonlinear unmixing and nonlinearity detection," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Florence, Italy, May 2014.
- [CI22] Q. Wei, N. Dobigeon, and J.-Y. Tournet, "Bayesian fusion of hyperspectral and multispectral images," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Florence, Italy, May 2014.
- [CI23] L. Chaari, H. Batatia, N. Dobigeon, and J.-Y. Tournet, "A hierarchical sparsity-smoothness bayesian model for l0-l1-l2 regularization," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Florence, Italy, May 2014.
- [CI24] Y. Altmann, N. Dobigeon, and J.-Y. Tournet, "Bayesian algorithm for unsupervised unmixing of hyperspectral images using a post-nonlinear model," in *Proc. European Signal Processing Conf. (EUSIPCO)*, Marrakech, Morocco, Sept. 2013, invited paper.
- [CI25] N. Dobigeon and C. Févotte, "Robust nonnegative matrix factorization for nonlinear unmixing of hyperspectral images," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Gainesville, FL, June 2013.
- [CI26] Y. Altmann, N. Dobigeon, and J.-Y. Tournet, "Nonlinear hyperspectral unmixing using gaussian processes," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Gainesville, FL, June 2013, invited paper, Best Paper Award.
- [CI27] Y. Altmann, N. Dobigeon, J.-Y. Tournet, and J. C. M. Bermudez, "A robust test for nonlinear mixture detection in hyperspectral images," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, June 2013, pp. 2149–2153.
- [CI28] H. Wendt, N. Dobigeon, J.-Y. Tournet, and P. Abry, "Bayesian estimation for the multifractality parameter," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, June 2013, pp. 6556–6560.
- [CI29] C. Bazot, N. Dobigeon, J.-Y. Tournet, and A. O. Hero, "Bayesian analysis of time-evolving gene expression data with hidden Markov model," in *Proc. European Signal Processing Conf. (EUSIPCO)*, Bucharest, Romania, Sept. 2012, pp. 944–948.
- [CI30] N. Dobigeon, A. Basarab, J.-Y. Tournet, and D. Kouamé, "Regularized Bayesian compressed sensing in ultrasound imaging," in *Proc. European Signal Processing Conf. (EUSIPCO)*, Bucharest, Romania, Sept. 2012, pp. 2600–2604.
- [CI31] Y. Altmann, N. Dobigeon, and J.-Y. Tournet, "Detecting nonlinear mixtures in hyperspectral images," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Shanghai, China, June 2012, invited paper.
- [CI32] O. Besson, N. Dobigeon, and J.-Y. Tournet, "Bayesian subspace estimation using cs decomposition," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Kyoto, Japan, March 2012, pp. 2437–2440.
- [CI33] Y. Altmann, N. Dobigeon, S. McLaughlin, and J.-Y. Tournet, "Nonlinear unmixing of hyperspectral images using Gaussian processes," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Kyoto, Japan, March 2012, pp. 1249–1252.
- [CI34] F. Schmidt, S. Bourguignon, S. L. Mouëlic, N. Dobigeon, and E. Tréguier, "Constraining Martian mineralogical compositions using hyperspectral images," in *Proc. Lunar and Planetary Science Conf. (LPSC)*, vol. 43, The Woodlands, Texas, March 2012, paper 1659.
- [CI35] S.-U. Park, N. Dobigeon, and A. O. Hero, "Variational semi-blind sparse image reconstruction with application to MRFM," in *Proc. SPIE-IS&T Electronic Imaging, Computational Imaging X*, C. A. Bouman, I. Pollak, and P. J. Wolfe, Eds., vol. 8296. San Francisco, CA: SPIE, Jan. 2012, paper 8296-15.
- [CI36] C. Quinsac, N. Dobigeon, A. Basarab, J.-Y. Tournet, and D. Kouamé, "Bayesian compressed sensing in ultrasound imaging," in *Proc. IEEE Int. Workshop Comput. Adv. in Multi-Sensor Adaptive Process. (CAMSAP)*, San Juan, Puerto Rico, Dec. 2011, pp. 101–104, invited paper.
- [CI37] O. Besson, N. Dobigeon, and J.-Y. Tournet, "Bayesian estimation of a subspace," in *Rec. 45th IEEE Asilomar Conf. Signals, Systems and Computers (Asilomar)*, Pacific Grove, CA, Nov. 2011, pp. 629–633.
- [CI38] F. Schmidt, S. Bourguignon, S. L. Mouëlic, N. Dobigeon, C. Theys, and E. Tréguier, "Accuracy and performance of linear unmixing techniques for detecting minerals on Omega/Mars Express," in *Proc. European Planetary Science Congress (EPSC)*, vol. 6, Nantes, France, Oct. 2011, paper 969-1.

- [CI39] E. Tréguier, F. Schmidt, S. Erard, A. Schmidt, A. Cardesín, P. Martin, P. Pinet, S. Moussaoui, and N. Dobigeon, "Investigation of a small set of hyperspectral images through non-negative source separation," in *Proc. European Planetary Science Congress (EPSC)*, vol. 6, Nantes, France, Oct. 2011, paper 1852-1.
- [CI40] M. Pereyra, N. Dobigeon, H. Batatia, and J.-Y. Tourneret, "Segmentation of high frequency ultrasound images using a spatially coherent generalized Rayleigh mixture model," in *Proc. European Signal Processing Conf. (EUSIPCO)*, Barcelona, Spain, Sept. 2011, pp. 664–668, invited paper.
- [CI41] A. Halimi, Y. Altmann, N. Dobigeon, and J.-Y. Tourneret, "Unmixing hyperspectral images using the generalized bilinear model," in *Proc. IEEE Int. Geosci. Remote Sens. Symp. (IGARSS)*, Vancouver, Canada, July 2011, pp. 1886–1889.
- [CI42] Y. Altmann, A. Halimi, N. Dobigeon, and J.-Y. Tourneret, "A polynomial post nonlinear model for hyperspectral image unmixing," in *Proc. IEEE Int. Geosci. Remote Sens. Symp. (IGARSS)*, Vancouver, Canada, July 2011, pp. 1882–1885.
- [CI43] Y. Altmann, N. Dobigeon, S. McLaughlin, and J.-Y. Tourneret, "Nonlinear unmixing of hyperspectral images using radial basis functions and orthogonal least squares," in *Proc. IEEE Int. Geosci. Remote Sens. Symp. (IGARSS)*, Vancouver, Canada, July 2011, pp. 1151–1154, invited paper.
- [CI44] Z. Irace, M. Pereyra, N. Dobigeon, and H. Batatia, "Bayesian segmentation of chest tumors in PET scans using a Poisson-Gamma mixture model," in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Nice, France, June 2011, pp. 809–812.
- [CI45] A. Halimi, Y. Altmann, N. Dobigeon, and J.-Y. Tourneret, "Nonlinear unmixing of hyperspectral images using a generalized bilinear model," in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Nice, France, June 2011, pp. 413–416.
- [CI46] F. Schmidt, S. Bourguignon, S. L. Mouëlic, N. Dobigeon, C. Theys, and E. Tréguier, "Accuracy and performance of linear unmixing techniques for detecting minerals on Omega/Mars Express," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Lisbon, Portugal, June 2011, pp. 1–4, invited paper.
- [CI47] O. Eches, J. A. Benediktsson, N. Dobigeon, and J.-Y. Tourneret, "Joint spectral classification and unmixing using adaptative pixel neighborhoods," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Lisbon, Portugal, June 2011, pp. 1–4.
- [CI48] Y. Altmann, N. Dobigeon, and J.-Y. Tourneret, "Bilinear models for nonlinear unmixing of hyperspectral images," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Lisbon, Portugal, June 2011, pp. 1–4.
- [CI49] M. Pereyra, N. Dobigeon, H. Batatia, and J.-Y. Tourneret, "Labeling skin tissues in ultrasound images using a generalized Rayleigh mixture model," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Prague, Czech Republic, May 2011, pp. 729–732.
- [CI50] O. Eches, N. Dobigeon, J.-Y. Tourneret, and H. Snoussi, "Variational methods for spectral unmixing of hyperspectral unmixing," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Prague, Czech Republic, May 2011, pp. 957–960.
- [CI51] C. Bazot, N. Dobigeon, and J.-Y. Tourneret, "Bernoulli-Gaussian model for gene expression analysis," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Prague, Czech Republic, May 2011, pp. 5996–5999, invited paper.
- [CI52] Y. Altmann, A. Halimi, N. Dobigeon, and J.-Y. Tourneret, "Supervised nonlinear spectral unmixing using a polynomial post nonlinear model for hyperspectral imagery," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Prague, Czech Republic, May 2011, pp. 1009–1012.
- [CI53] A. Schmidt, E. Tréguier, F. Schmidt, S. Moussaoui, and N. Dobigeon, "Non-negative matrix factorisation in context," in *Proc. European Geosciences Union General Assembly (EGU)*, vol. 11, Vienna, Austria, April 2011, paper 9072-1.
- [CI54] E. Tréguier, A. Schmidt, F. Schmidt, A. Cardesín, S. Erard, P. Martin, P. Pinet, S. Moussaoui, and N. Dobigeon, "Analysis of a collection of planetary hyperspectral images through non-negative source separation," in *Proc. European Geosciences Union General Assembly (EGU)*, vol. 13, Vienna, Austria, April 2011, paper 13174.
- [CI55] S.-U. Park, N. Dobigeon, and A. O. Hero, "Myopic reconstruction and its application to MRFM data," in *Proc. SPIE-IS&T Electronic Imaging, Computational Imaging IX*, C. A. Bouman, I. Pollak, and P. J. Wolfe, Eds., vol. 7873. San Francisco, CA: SPIE, Jan. 2011, pp. 787 303–1–787 303–14.

- [CI56] E. Tréguier, F. Schmidt, A. Schmidt, S. Moussaoui, N. Dobigeon, S. Erard, A. Cardesín, P. Pinet, and P. Martin, "Investigating Martian and Venusian hyperspectral datasets through positive source separation," in *AGU Fall Meeting Abstracts*, San Francisco, CA, Dec. 2010, abstract #P53B-1518.
- [CI57] C. Bazot, N. Dobigeon, J.-Y. Tournet, and A. O. Hero, "Unsupervised bayesian analysis of gene expression patterns," in *Rec. 44th IEEE Asilomar Conf. Signals, Systems and Computers (Asilomar)*, Pacific Grove, CA, Nov. 2010, pp. 364–368, invited paper.
- [CI58] A. Schmidt, E. Tréguier, F. Schmidt, M. Guiheneuf, S. Moussaoui, N. Dobigeon, and C. Pelloquin, "Multi-image unsupervised spectral analysis," in *Proc. European Planetary Science Congress (EPSC)*, vol. 5, Roma, Italy, Sept. 2010, paper 590.
- [CI59] O. Eches, N. Dobigeon, and J.-Y. Tournet, "Unmixing hyperspectral images using Markov random fields," in *Proc. Int. Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt)*, ser. AIP Conf. Proc., A. Mohammad-Djafari, J.-F. Bercher, and P. Bessi re, Eds., vol. 1305, no. 1. Chamonix, France: AIP, July 2010, pp. 303–310, invited paper.
- [CI60] F. Schmidt, A. Schmidt, E. Tréguier, M. Guiheneuf, S. Moussaoui, and N. Dobigeon, "Accuracy and performance of optimized Bayesian source separation for hyperspectral unmixing," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Reykjavik, Iceland, Jun. 2010, pp. 1–4.
- [CI61] O. Eches, N. Dobigeon, and J.-Y. Tournet, "Markov random fields for joint unmixing and segmentation of hyperspectral images," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Reykjavik, Iceland, Jun. 2010, pp. 1–4, invited paper.
- [CI62] A. Schmidt, F. Schmidt, E. Tréguier, S. Moussaoui, and N. Dobigeon, "Matrix approximation techniques for unsupervised hyperspectral data analysis," in *Proc. European Geosciences Union General Assembly (EGU)*, vol. 12, Vienna, Austria, May 2010, paper 10027-2.
- [CI63] E. Tréguier, F. Schmidt, A. Schmidt, M. Guiheneuf, S. Moussaoui, N. Dobigeon, and P. Martin, "Multivariate approach for evaluating the composition of meridiani spherules," in *Proc. European Geosciences Union General Assembly (EGU)*, vol. 12, Vienna, Austria, May 2010, paper 12824-1.
- [CI64] G. Kail, J.-Y. Tournet, F. Hlawatsch, and N. Dobigeon, "A partially collapsed Gibbs sampler for parameters with local constraints," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Dallas, USA, March 2010, pp. 3886–3889.
- [CI65] O. Eches, N. Dobigeon, and J.-Y. Tournet, "A reversible-jump MCMC algorithm for estimating the number of endmembers in the normal compositional model. application to the unmixing of hyperspectral images," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Dallas, USA, March 2010, pp. 1222–1225.
- [CI66] N. Dobigeon, S. Moussaoui, M. Coulon, J.-Y. Tournet, and A. O. Hero, "Subspace-based Bayesian blind source separation for hyperspectral imagery," in *Proc. IEEE Int. Workshop Comput. Adv. in Multi-Sensor Adaptive Process. (CAMSAP)*, vol. 4, Aruba, Dutch Antilles, Dec. 2009, pp. 372–375, invited paper.
- [CI67] F. Schmidt, S. Moussaoui, and N. Dobigeon, "Material identification on hyperspectral images using Bayesian source separation," in *Proc. European Planetary Science Congress (EPSC)*, vol. 4, Potsdam, Germany, Sept. 2009, paper 289.
- [CI68] E. Tréguier, F. Schmidt, P. Pinet, P. Martin, C. d'Uston, S. Moussaoui, and N. Dobigeon, "Multivariate approach for evaluating the composition of meridiani spherules," in *Proc. European Planetary Science Congress (EPSC)*, vol. 4, Potsdam, Germany, Sept. 2009, paper 91.
- [CI69] C. Theys, N. Dobigeon, J.-Y. Tournet, and H. Lant ri, "Linear unmixing of hyperspectral images using a scaled gradient method," in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Cardiff, UK, Aug. 2009, pp. 729–732.
- [CI70] O. Eches, N. Dobigeon, C. Mailhes, and J.-Y. Tournet, "Unmixing hyperspectral images using a normal compositional model and MCMC methods," in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Cardiff, UK, Aug. 2009, pp. 646–649.
- [CI71] F. Schmidt, S. Moussaoui, and N. Dobigeon, "Material identification on Martian hyperspectral images using Bayesian source separation," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Grenoble, France, Aug. 2009, pp. 1–4.
- [CI72] O. Eches, N. Dobigeon, and J.-Y. Tournet, "NCM-based Bayesian algorithm for hyperspectral unmixing," in *Proc. IEEE GRSS Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Grenoble, France, Aug. 2009, pp. 1–4.

- [CI73] N. Dobigeon, A. O. Hero, and J.-Y. Tournet, "Bayesian sparse image reconstruction for MRFM," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Taipei, ROC, April 2009, pp. 2933–2936.
- [CI74] N. Dobigeon and J.-Y. Tournet, "Library-based linear unmixing for hyperspectral imagery via reversible jump MCMC sampling," in *Proc. IEEE/AIAA Aerospace Conference (AeroConf)*, vol. 1–6, Big Sky, USA, March 2009, invited paper.
- [CI75] —, "MCMC sampling for joint segmentation of wind speed and direction," in *Proc. IEEE Digital Signal Processing Workshop (DSP)*, Marco Island, USA, Jan. 2009, pp. 250–255, invited paper.
- [CI76] N. Dobigeon, J.-Y. Tournet, and A. O. Hero, "Bayesian linear unmixing of hyperspectral images corrupted by colored Gaussian noise with unknown covariance matrix," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Las Vegas, USA, March 2008, pp. 3433–3436.
- [CI77] N. Dobigeon, J.-Y. Tournet, and S. Moussaoui, "Blind unmixing of linear mixtures using a hierarchical Bayesian model. application to spectroscopic signal analysis," in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Madison, USA, Aug. 2007, pp. 79–83.
- [CI78] N. Dobigeon and J.-Y. Tournet, "Spectral unmixing of hyperspectral images using a hierarchical Bayesian model," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, vol. 3, Honolulu, Hawaii, USA, April 2007, pp. 1209–1212.
- [CI79] N. Dobigeon, J.-Y. Tournet, and J. D. Scargle, "Joint segmentation of multivariate poissonian time series applications to burst and transient source experiments," in *Proc. European Signal Processing Conf. (EUSIPCO)*, Florence, Italy, Sept. 2006.
- [CI80] N. Dobigeon, J.-Y. Tournet, and M. Davy, "Joint segmentation of piecewise constant autoregressive processes by using a hierarchical model and a Bayesian sampling approach," in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, vol. 3, Toulouse, France, May 2006, pp. 1–4.
- [CI81] N. Dobigeon, J.-Y. Tournet, and J. D. Scargle, "Change-point detection in astronomical data by using a hierarchical model and a bayesian sampling approach," in *Proc. IEEE Workshop on Statistical Signal Processing (SSP)*, Bordeaux, France, July 2005, pp. 369–374.
- [CI82] N. Dobigeon and V. Achard, "Performance comparison of geometric and statistical methods for end-members extraction in hyperspectral imagery," in *Proc. SPIE Image and Signal Processing for Remote Sensing XI*, L. Bruzzone, Ed., vol. 5982, no. 1. Brugge, Belgium: SPIE, Oct. 2005, pp. 598 213–1–598 213–10.

Articles de conférences nationales

- [CN1] P.-A. Thouvenin, N. Dobigeon, and J.-Y. Tournet, "Estimation de variabilité pour le démixage non-supervisé d'images hyperspectrales," in *Actes du XXVIème Colloque GRETSI*, Lyon, France, 2015, in french.
- [CN2] S. Combexelle, H. Wendt, J.-Y. Tournet, N. Dobigeon, S. McLaughlin, and P. Abry, "Estimation bayésienne locale du paramètre de multifractalité à l'aide d'un algorithme de Monte Carlo hamiltonien," in *Actes du XXVIème Colloque GRETSI*, Lyon, France, 2015, in french.
- [CN3] H. Wendt, N. Dobigeon, J.-Y. Tournet, and P. Abry, "Estimation bayésienne du paramètre de multifractalité," in *Actes du XXIVème Colloque GRETSI*, Brest, France, Sept. 2013, in french.
- [CN4] Z. Irace, M. Pereyra, N. Dobigeon, and H. Batatia, "Un modèle bayésien de mélange de lois Poisson-Gamma pour segmenter des images TEP," in *Actes de la Conférence Reconnaissance des Formes et Intelligence Artificielle (RFIA)*, Lyon, France, Jan. 2012, in french.
- [CN5] M. Pereyra, N. Dobigeon, H. Batatia, and J.-Y. Tournet, "Un modèle de mélange de lois Rayleigh généralisées pour la classification des échographies cutanées," in *Actes du XXIIIème Colloque GRETSI*, Bordeaux, France, Sept. 2011, in french.
- [CN6] Y. Altmann, N. Dobigeon, S. McLaughlin, and J.-Y. Tournet, "Démixage non linéaire d'images hyperspectrales à l'aide de fonctions radiales de base et de moindres carrés orthogonaux," in *Actes du XXIIIème Colloque GRETSI*, Bordeaux, France, Sept. 2011, in french.
- [CN7] O. Eches, N. Dobigeon, J.-Y. Tournet, and H. Snoussi, "Méthodes variationnelles pour le démixage d'images hyperspectrales," in *Actes du XXIIIème Colloque GRETSI*, Bordeaux, France, Sept. 2011, in french.
- [CN8] C. Quinsac, N. Dobigeon, A. Basarab, J.-Y. Tournet, and D. Kouamé, "Echantillonnage compressé bayésien en imagerie ultrasonore," in *Actes du XXIIIème Colloque GRETSI*, Bordeaux, France, Sept. 2011, in french.

- [CN9] C. Bazot, N. Dobigeon, J.-Y. Tournet, and A. O. Hero, "Modèle bernoulli-gaussien pour l'analyse génétique," in *Actes du XXIIIème Colloque GRETSI*, Bordeaux, France, Sept. 2011, in french.
- [CN10] N. Dobigeon, A. O. Hero, and J.-Y. Tournet, "Reconstruction bayésienne images MRFM parcimonieuses," in *Actes du XXIIIème Colloque GRETSI*, Dijon, France, Sept. 2009, in french.
- [CN11] N. Dobigeon, S. Moussaoui, M. Coulon, and J.-Y. Tournet, "Extraction de composants purs et démixage linéaire bayésien en imagerie hyperspectrale," in *Actes du XXIIIème Colloque GRETSI*, Dijon, France, Sept. 2009, in french.
- [CN12] O. Eches, N. Dobigeon, and J.-Y. Tournet, "Analyse d'images hyperspectrales à l'aide d'un modèle de mélange de spectres aléatoires," in *Actes du XXIIIème Colloque GRETSI*, Dijon, France, Sept. 2009, in french.
- [CN13] N. Dobigeon, S. Moussaoui, and J.-Y. Tournet, "Séparation bayésienne de sources spectrales sous contraintes de positivité et d'additivité," in *Actes du XXIème Colloque GRETSI*, Troyes, France, Sept. 2007, in french.
- [CN14] N. Dobigeon and J.-Y. Tournet, "Segmentation conjointe de données poissonniennes," in *Actes du XXIème Colloque GRETSI*, vol. 1, Louvain-la-Neuve, Belgium, Sept. 2005, pp. 105–108, in french.

Thèses et manuscrits académiques

- [Th1] N. Dobigeon, "Inférence bayésienne dans des problèmes inverses, myopes et aveugles en traitement du signal et des images," Habilitation à Diriger des Recherches, INP-ENSEEIH, Toulouse, France, October 2012.
- [Th2] —, "Modèles bayésien hiérarchiques pour le traitement multi-capteur," Ph.D. dissertation, INP-ENSEEIH, Toulouse, France, October 2007.
- [Th3] —, "Choix et implantation d'une méthode d'extraction de pôles de mélange dans une image hyperspectrale," Master's thesis, INP-ENSEEIH, Toulouse, France, June 2004.

Rapports techniques

- [RT1] V. Ferraris, N. Dobigeon, Q. Wei, and M. Chabert, "Detecting changes between optical images of different spatial and spectral resolutions: a fusion-based approach – Complementary results," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Dec. 2016. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Ferraris_TechReport_2016.pdf
- [RT2] P.-A. Thouvenin, N. Dobigeon, and J.-Y. Tournet, "Robust unmixing of multitemporal hyperspectral – Complementary results and supporting materials," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Sept. 2016. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Thouvenin_TechReport_2016.pdf
- [RT3] Q. Wei, N. Dobigeon, J.-Y. Tournet, J. M. Bioucas-Dias, and S. Godsill, "R-FUSE: Robust fast fusion of multi-band images based on solving a Sylvester equation – Complementary results and supporting materials," Department of Engineering, University of Cambridge, Cambridge, U.K., Tech. Rep., July 2016. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Wei_TechReport_2016.pdf
- [RT4] C. Elvira, P. Chainais, and N. Dobigeon, "Bayesian anti-sparse coding – Complementary results and supporting materials," University of Lille, CNRS, CRISAL and University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., July 2016. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Elvira_TechReport_2016.pdf
- [RT5] P.-A. Thouvenin, N. Dobigeon, and J.-Y. Tournet, "Online unmixing of multitemporal hyperspectral images accounting for spectral variability – Complementary results," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Oct. 2015. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Thouvenin_TechReport_2015.pdf
- [RT6] H. Wendt, N. Dobigeon, J.-Y. Tournet, M. Albinet, C. Goldstein, and N. Karouche, "Detection and correction of glitches in a multiplexed multi-channel data stream – Application to the MADRAS instrument – Complementary results and supporting materials," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Oct. 2015. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Wendt_TechReport_2015.pdf
- [RT7] Q. Wei, N. Dobigeon, and J.-Y. Tournet, "Bayesian fusion of multispectral and hyperspectral images using a block coordinate descent method - Complementary results and supporting materials," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., March 2015. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Wei_TechReport_2015c.pdf

- [RT8] —, “Fast fusion of multi-band images based on solving a sylvester equation – Complementary results and supporting materials,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Feb. 2015. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Wei_TechReport_2015b.pdf
- [RT9] —, “Bayesian fusion of multi-band images – Complementary results and supporting materials,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Feb. 2015. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Wei_TechReport_2015a.pdf
- [RT10] A. Halimi, N. Dobigeon, and J.-Y. Tourneret, “Unsupervised unmixing of hyperspectral images accounting for endmember variability - Complementary results and supporting materials,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Dec. 2014. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Halimi_TechReport_2014.pdf
- [RT11] Q. Wei, J. M. Bioucas-Dias, N. Dobigeon, and J.-Y. Tourneret, “Hyperspectral and multispectral image fusion based on a sparse representation,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Oct. 2014. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Wei_TechReport_2014.pdf
- [RT12] Y. Altmann, N. Dobigeon, S. McLaughlin, and J.-Y. Tourneret, “Residual component analysis of hyperspectral images - Application to joint nonlinear unmixing and nonlinearity detection,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Nov. 2013. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Altmann_TechReport_2013c.pdf
- [RT13] Y. Altmann, N. Dobigeon, and J.-Y. Tourneret, “Unsupervised post-nonlinear unmixing of hyperspectral images using a Hamiltonian Monte Carlo algorithm,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Oct. 2013. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Altmann_TechReport_2013b.pdf
- [RT14] —, “Bayesian algorithm for unsupervised unmixing of hyperspectral images using a post-nonlinear model,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., March 2013. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Altmann_TechReport_2013.pdf
- [RT15] Y. Altmann, N. Dobigeon, S. McLaughlin, and J.-Y. Tourneret, “Nonlinear spectral unmixing of hyperspectral images using Gaussian processes,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Jul. 2012. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Altmann_TechReport_2012.pdf
- [RT16] M. Pereyra, N. Dobigeon, H. Batatia, and J.-Y. Tourneret, “Estimating the granularity coefficient of a Potts-Markov random field within an MCMC algorithm,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Apr. 2012. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Pereyra_TechReport_2012.pdf
- [RT17] O. Besson, N. Dobigeon, and J.-Y. Tourneret, “CS decomposition based Bayesian subspace estimation,” University of Toulouse, ISAE & IRIT/INP-ENSEEIH, France, Tech. Rep., Jul. 2011. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Besson_TechReport_2012.pdf
- [RT18] M. Pereyra, N. Dobigeon, H. Batatia, and J.-Y. Tourneret, “Segmentation of skin lesions in 2d and 3d ultrasound images using a spatially coherent generalized Rayleigh mixture model,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Dec. 2011. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Pereyra_TechReport_2011.pdf
- [RT19] Y. Altmann, N. Dobigeon, and J.-Y. Tourneret, “Nonlinearity detection in hyperspectral images using a polynomial post-nonlinear mixing model,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Dec. 2011. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Altmann_TechReport_2011b.pdf
- [RT20] Y. Altmann, A. Halimi, N. Dobigeon, and J.-Y. Tourneret, “Supervised nonlinear spectral unmixing using a post-nonlinear mixing model for hyperspectral imagery,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Nov. 2011. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Altmann_TechReport_2011.pdf
- [RT21] O. Besson, N. Dobigeon, and J.-Y. Tourneret, “Minimum mean square distance estimation of a subspace,” University of Toulouse, ISAE & IRIT/INP-ENSEEIH, France, Tech. Rep., Jul. 2011. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Besson_TechReport_2011.pdf
- [RT22] O. Eches, N. Dobigeon, J.-Y. Tourneret, and H. Snoussi, “Variational methods for spectral unmixing of hyperspectral images,” University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., May 2011. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Eches_TechReport_2011b.pdf

- [RT23] O. Eches, N. Dobigeon, and J.-Y. Tourneret, "Enhancing hyperspectral image unmixing with spatial correlations," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Jan. 2011. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Eches_TechReport_2011.pdf
- [RT24] A. Halimi, Y. Altmann, N. Dobigeon, and J.-Y. Tourneret, "Nonlinear unmixing of hyperspectral images using a generalized bilinear model," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Oct. 2010. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Halimi_TechReport_2010.pdf
- [RT25] N. Dobigeon and J.-Y. Tourneret, "Bayesian orthogonal component analysis for sparse representation. extension to non-homogeneous sparsity level over times," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Nov. 2009. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Dobigeon_TechReport_2009.pdf
- [RT26] O. Eches, N. Dobigeon, and J.-Y. Tourneret, "Estimating the number of endmembers in hyperspectral images using the normal compositional model and a hierarchical Bayesian algorithm," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Oct. 2009. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Eches_TechReport_2009b.pdf
- [RT27] O. Eches, N. Dobigeon, C. Mailhes, and J.-Y. Tourneret, "Unmixing hyperspectral images using a normal compositional model and MCMC methods," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Mar. 2009. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Eches_TechReport_2009a.pdf
- [RT28] N. Dobigeon and J.-Y. Tourneret, "Bayesian sampling of structured noise covariance matrix for hyperspectral imagery," University of Toulouse, IRIT/INP-ENSEEIH, France, Tech. Rep., Dec. 2008. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Dobigeon_TechReport_2008b.pdf
- [RT29] —, "Recursive computation of the normalization constant of a multivariate Gaussian distribution truncated on a simplex," University of Michigan, USA, Tech. Rep., Jan. 2008. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Dobigeon_TechReport_2008a.pdf
- [RT30] N. Dobigeon, J.-Y. Tourneret, and C.-I. Chang, "Semi-supervised linear spectral unmixing using a hierarchical Bayesian model for hyperspectral imagery," IRIT/ENSEEIH/TeSA & University of Maryland, France and USA, Tech. Rep., Mar. 2007. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Dobigeon_TechReport_2007c.pdf
- [RT31] N. Dobigeon and J.-Y. Tourneret, "Efficient sampling according to a multivariate Gaussian distribution truncated on a simplex," IRIT/ENSEEIH/TeSA, France, Tech. Rep., Mar. 2007. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Dobigeon_TechReport_2007b.pdf
- [RT32] —, "Truncated multivariate Gaussian distribution on a simplex," IRIT/ENSEEIH/TeSA, France, Tech. Rep., Jan. 2007. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Dobigeon_TechReport_2007a.pdf
- [RT33] N. Dobigeon, J.-Y. Tourneret, and M. Davy, "Joint segmentation of piecewise constant autoregressive processes by using a hierarchical model and a Bayesian sampling approach," IRIT/ENSEEIH/TeSA & LAGIS, France, Tech. Rep., Mar. 2006. [Online]. Available: http://dobigeon.perso.enseeiht.fr/papers/Dobigeon_TechReport_2006.pdf

Rapports de contrats

- [RC1] N. Dobigeon and J.-Y. Tourneret, "Détection de mélanges non-linéaires dans les images hyperspectrales," Toulouse, France, Tech. Rep., Jan. 2014.
- [RC2] —, "Dictionnaire pour imagerie parcimonieuse," CNES, Toulouse, France, Contract Rep., May 2013.
- [RC3] H. Wendt, N. Dobigeon, and J.-Y. Tourneret, "Algorithmes complémentaires de reconstruction de données de l'instrument MADRAS," CNES/CLS, Toulouse, France, Industrial Rep., Sept. 2012.
- [RC4] —, "Algorithmes de reconstruction de données de l'instrument MADRAS," CNES/CLS, Toulouse, France, Industrial Rep., June 2012.
- [RC5] J.-Y. Tourneret, N. Dobigeon, and A. Ferrari, "Désentrelacement des mesures TDOA et FDOA," CNES, Toulouse, France, Contract Rep., Mar. 2011.