

1.1. Articles scientifiques publiés dans revues ou journaux nationaux / internationaux à comité de lecture

2013

1. J.-P. Braeunig, D. Chauveheid, J.-M. Ghidaglia. ***A totally Eulerian finite volume solver for multi-material fluid flows III: The low Mach number case.*** EUROPEAN JOURNAL OF MECHANICS B-FLUIDS, 42:10–19, NOV-DEC 2013. DOI: 10.1016/j.euromechflu.2013.06.007
2. A. Ciomaga, J.-M. Morel. ***A proof of equivalence between level lines shortening and curvature motion in image processing.*** SIAM JOURNAL ON MATHEMATICAL ANALYSIS, 45(3):1047–1067, 2013. DOI: 10.1137/11082347X
3. S. Clemençon, M. Depecker, and N. Vayatis. ***Ranking forests.*** JOURNAL OF MACHINE LEARNING RESEARCH, 14:39–73, JAN 2013.
4. J. Delon, A. Desolneux. ***A patch-based approach for removing impulse or mixed Gaussian-impulse noise.*** SIAM JOURNAL ON IMAGING SCIENCES, 6(2):1140–1174, 2013. DOI: 10.1137/120885000
5. S. Durrleman, X. Pennec, A. Trouvé, J. Braga, G. Gerig, and N. Ayache. ***Toward a comprehensive framework for the spatiotemporal statistical analysis of longitudinal shape data.*** INTERNATIONAL JOURNAL OF COMPUTER VISION, 103(1):22–59, MAY 2013. DOI: 10.1007/s11263-012-0592-x
6. M. Lebrun, A. Buades, J. M. Morel. ***A nonlocal Bayesian image denoising algorithm.*** SIAM JOURNAL ON IMAGING SCIENCES, 6(3):1665–1688, 2013. DOI: 10.1137/120874989
7. M. Nikolova. ***Description of the minimizers of least squares regularized with $\ell(0)$ -norm. uniqueness of the global minimizer.*** SIAM JOURNAL ON IMAGING SCIENCES, 6(2):904–937, 2013. DOI: 10.1137/11085476X
8. L. O'Brien, J. M. Dudley, and F. Dias. ***Extreme wave events in Ireland: 14 680 BP-2012.*** NATURAL HAZARDS AND EARTH SYSTEM SCIENCES, 13(3):625–648, 2013. DOI: 10.5194/nhess-13-625-2013
9. J. Sánchez Pérez, E. Meinhardt-Holzapfel, G. Facciolo. ***TV-L1 optical flow estimation,*** IMAGE PROCESSING ON LINE, 3:137–150, 2013. DOI: 10.5201/ipol.2013.26
10. E. Renzi, F. Dias. ***Hydrodynamics of the oscillating wave surge converter in the open ocean.*** EUROPEAN JOURNAL OF MECHANICS B-FLUIDS, 41:1–10, SEP-OCT 2013. DOI: 10.1016/j.euromechflu.2013.01.007
11. Y. Tendero, J.-M. Morel, B. Rouge. ***The flutter shutter paradox.*** SIAM JOURNAL ON IMAGING SCIENCES, 6(2):813–847, 2013. DOI: 10.1137/120880665
12. Y.-Q. Wang. ***The implementation of sure guided piecewise linear image denoising,*** IMAGE PROCESSING ON LINE, 3:43–67, 2013. DOI: 10.5201/ipol.2013.52

2014

1. F. Baus, M. Nikolova, and G. Steidl. ***Fully smoothed $\ell(1)$ -TV models: bounds for the minimizers and parameter choice.*** JOURNAL OF MATHEMATICAL IMAGING AND VISION, 48(2, SI):295–307, FEB 2014. DOI: 10.1007/s10851-013-0420-0
2. S. Benjelloun, A. Moussa, and L. Desvillettes. ***Existence theory for the kinetic-fluid coupling when small droplets are treated as part of the fluid.*** JOURNAL OF HYPERBOLIC DIFFERENTIAL EQUATIONS, 11(1):109–133, MAR 2014. DOI: 10.1142/S0219891614500027
3. A. Bernard-Champmartin and F. De Vuyst. ***A low diffusive Lagrange-remap scheme for the simulation of violent air-water free-surface flows.*** JOURNAL OF COMPUTATIONAL PHYSICS, 274:19–49, OCT 1 2014. DOI: 10.1016/j.jcp.2014.05.032
4. A. Bernard-Champmartin, O. Poujade, J. Mathiaud, and J.-M. Ghidaglia. ***Modelling of an homogeneous equilibrium mixture model (HEM).*** ACTA APPLICANDAE MATHEMATICAE, 129(1):1–21, FEB 2014. DOI: 10.1007/s10440-013-9827-2
5. N. Charon and A. Trouvé. ***Functional currents: a new mathematical tool to model and analyse functional shapes.*** JOURNAL OF MATHEMATICAL IMAGING AND VISION, 48(3):413–431, MAR 2014. DOI: 10.1007/s10851-012-0413-4
6. I. Chauvet de Beauchene, A. Allain, N. Panel, E. Laine, A. Trouvé, P. Dubreuil, and L. Tchertanov. ***Hotspot mutations in KIT receptor differentially modulate its allosterically coupled conformational dynamics: impact on activation and drug sensitivity.*** PLOS COMPUTATIONAL BIOLOGY, 10(7), JUL 2014. DOI: 10.1371/journal.pcbi.1003749
7. A. Chen, J. Darbon, and J.-M. Morel. ***Landscape evolution models: a review of their fundamental equations.*** GEOMORPHOLOGY, 219 (2014): 68–86. DOI: 10.1016/j.geomorph.2014.04.037

8. M. Colom, A. Buades, and J.-M. Morel. **Nonparametric noise estimation method for raw images.** JOURNAL OF THE OPTICAL SOCIETY OF AMERICA A-OPTICS IMAGE SCIENCE AND VISION, 31(4):863–871, APR 2014. DOI: 10.1364/JOSAA.31.000863
9. F. De Vuyst and F. Salvarani. **Numerical simulations of degenerate transport problems.** KINETIC AND RELATED MODELS, 7(3):463–476, SEP 2014. DOI: 10.3934/krm.2014.7.463
10. M. Delbracio, P. Muse, A. Buades, J. Chauvier, N. Phelps, and J.-M. Morel. **Boosting Monte Carlo rendering by ray histogram fusion.** ACM TRANSACTIONS ON GRAPHICS, 33(1), JAN 2014. DOI: 10.1145/2532708
11. L. Desvillettes, T. Lepoutre, and A. Moussa. **Entropy, duality, and cross diffusion.** SIAM JOURNAL ON MATHEMATICAL ANALYSIS, 46(1):820–853, 2014. DOI: 10.1137/130908701
12. J. Digne and J.-M. Morel. **Numerical analysis of differential operators on raw point clouds.** NUMERISCHE MATHEMATIK, 127(2):255–289, JUN 2014. DOI: 10.1007/s00211-013-0584-y
13. G. Facciolo, N. Limare, and E. Meinhardt-Llopis, **Integral Images for block matching,** IMAGE PROCESSING ON LINE, 4:344–369, 2014. DOI: 10.5201/ipol.2014.57
14. B. Matei, Y. Meyer, and J. Ortega-Cerda. **Stable sampling and Fourier multipliers.** PUBLICACIONES MATEMÁTIQUES, 58(2):341–351, 2014. DOI: 10.5565/PUBLMAT_58214_17
15. M. Nikolova and G. Steidl. **Fast hue and range preserving histogram specification: theory and new algorithms for color image enhancement.** IEEE TRANSACTIONS ON IMAGE PROCESSING, 23(9):4087–4100, SEP 2014. DOI: 10.1109/TIP.2014.2337755
16. E. Richard, S. Gaiffas, and N. Vayatis. **Link prediction in graphs with autoregressive features.** JOURNAL OF MACHINE LEARNING RESEARCH, 15:565–593, FEB 2014. DOI :000335457700007
17. T. S. Stefanakis, E. Contal, N. Vayatis, F. Dias, C. E. Synolakis. **Can small islands protect nearby coasts from tsunamis? An active experimental design approach.** PROCEEDINGS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES, 470(2172), DEC 2014. DOI: 10.1098/rspa.2014.0575
18. M. Temporal, B. Canaud, W. J. Garbett, and R. Ramis. **Numerical analysis of the direct drive illumination uniformity for the laser megajoule facility.** PHYSICS OF PLASMAS, 21(1), JAN 2014. DOI: 10.1063/1.4863460
19. Y.-Q. Wang and J.-M. Morel. **Can a single image denoising neural network handle all levels of Gaussian noise?** IEEE SIGNAL PROCESSING LETTERS, 21(9):1150–1153, SEP 2014. DOI: 10.1109/LSP.2014.231461

2015

1. L. Alvarez, Y. Gousseau, J.-M. Morel, et Agustin Salgado. **Exploring the space of abstract textures by principles and random sampling.** JOURNAL OF MATHEMATICAL IMAGING AND VISION 53(3):332–345, NOV 2015. DOI: 10.1007/s10851-015-0582-z.
2. S. Arguillere, E. Trelat, A. Trouvé, L. Younes. **Shape deformation analysis from the optimal control viewpoint.** JOURNAL DE MATHEMATIQUES PURES ET APPLIQUEES 104(1):139–78, JUL 2015. DOI: 10.1016/j.matpur.2015.02.004.
3. M. Breden, L. Desvillettes, J.-P. Lessard. **Rigorous numerics for nonlinear operators with tridiagonal dominant linear part.** DISCRETE AND CONTINUOUS DYNAMICAL SYSTEMS 35(10): 4765–89, OCT 2015. DOI: 10.3934/dcds.2015.35.4765.
4. A. Buades, G. Haro, E. Meinhardt-Llopis. **Obtaining high quality photographs of paintings by image fusion.** IMAGE PROCESSING ON LINE, 5:159–175, 2015. DOI: 10.5201/ipol.2015.49
5. K. Carrapatoso. **On the rate of convergence to equilibrium for the homogeneous Landau equation with soft potentials.** JOURNAL DE MATHEMATIQUES PURES ET APPLIQUEES 104(2): 276–310 AUG 2015. DOI: 10.1016/j.matpur.2015.02.008.
6. R. H. Chan, Haixia Liang, Suhua Wei, M. Nikolova, Xue-Cheng Tai. **High-order total variation regularization approach for axially symmetric object tomography from a single radiograph.** INVERSE PROBLEMS AND IMAGING 9(1):55–77, FEV 2015. DOI: 10.3934/ipi.2015.9.55.
7. L. Desvillettes. **Entropy dissipation estimates for the Landau equation in the Coulomb case and applications.** JOURNAL OF FUNCTIONAL ANALYSIS 269, 5:1359–1403, SEP 2015. DOI: 10.1016/j.jfa.2015.05.009.
8. L. Desvillettes, T. Lepoutre, A. Moussa, et A. Trescases. **On the entropic structure of reaction-cross diffusion systems.** COMMUNICATIONS IN PARTIAL DIFFERENTIAL EQUATIONS 40(9):1705–1747, SEP 2015. DOI: 10.1080/03605302.2014.998837.

9. F. Langenfeld, Y. Guerracino, M. Arock, A. Trouvé, L. Tchertanov. **How intrinsic molecular dynamics control intramolecular communication in signal transducers and activators of transcription factor STAT5**. PLOS ONE 10(12) DEC 2015. DOI: 10.1371/journal.pone.0145142.
10. M. Lebrun, M. Colom, et J.-M. Morel. **Multiscale image blind denoising**. IEEE TRANSACTIONS ON IMAGE PROCESSING 24(10):3149-61, OCT 2015. DOI: 10.1109/TIP.2015.2439041.
11. M. Lebrun, M. Colom, and J.-M. Morel. **The Noise Clinic: a blind image denoising algorithm**. IMAGE PROCESSING ON LINE, 5 : 1–54, 2015. DOI: 10.5201/ipol.2015.125
12. J. Lezama, J.-M. Morel, G. Randall, et R. Grompone von Gioi. **A contrario 2D point alignment detection**. IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE 37(3) :499-512 MAR 2015. DOI: 10.1109/TPAMI.2014.2345389.
13. M. Miller, A. Trouvé, L. Younes. **Hamiltonian systems and optimal control in computational anatomy: 100 years since D'Arcy Thompson**. In ANNUAL REVIEW OF BIOMEDICAL ENGINEERING, VOL 17, M.L. Yarmush (ed.), 17:447-509, 2015. DOI: 10.1146/annurev-bioeng-071114-040601
14. L. Oudre. **Automatic detection and removal of impulsive noise in audio signals**. IMAGE PROCESSING ON LINE, 5:267–281, 2015. DOI: 10.5201/ipol.2015.64
15. T. S. Stefanakis, S. Xu, D. Dutykh, and F. Dias. **Run-up amplification of transient long waves**. QUARTERLY OF APPLIED MATHEMATICS, 73(1):177–199, 2015. DOI: 10.1090/S0033-569X-2015-01377-0
16. S. Varet, P. Dossantos-Uzarralde, N. Vayatis. **A statistical approach for experimental cross-section covariance estimation via shrinkage**. NUCLEAR SCIENCE AND ENGINEERING 179(4):398-410 APR 2015. DOI: 10.13182/NSE14-07

2016

1. J. Audiffren, I. Bargiolas, N. Vayatis, P.-P. Vidal, and D. Ricard. **A non linear scoring approach for evaluating balance: classification of elderly as fallers and non-fallers**. PLOS ONE, 11(12), DEC 9 2016. DOI: 10.1371/journal.pone.0167456
2. S. Blusseau, A. Carboni, A. Maiche, J.-M. Morel, and R. Grompone von Gioi. **Measuring the visual salience of alignments by their non-accidentalness**. VISION RESEARCH, 126(SI):192–206, SEP 2016. DOI : 10.1016/j.visres.2015.08.014
3. M. Breden, J.-P. Lessard, and J. D. M. James. **Computation of maximal local (un)stable manifold patches by the parameterization method**. INDAGATIONES MATHEMATICAE-NEW SERIES, 27(1):340–367, JAN 2016. DOI: 10.1016/j.indag.2015.11.001
4. G. Clair, J.-M. Ghidaglia, and J.-P. Perlat. **A multi-dimensional finite volume cell-centered direct ALE solver for hydrodynamics**. JOURNAL OF COMPUTATIONAL PHYSICS, 326:312–333, DEC 1 2016. DOI: 10.1016/j.jcp.2016.08.050
5. A. Desolneux. **When the a contrario approach becomes generative**. INTERNATIONAL JOURNAL OF COMPUTER VISION, 116(1):46–65, JAN 2016. DOI: 10.1007/s11263-015-0825-x
6. J. M. Di Martino, G. Facciolo, and E. Meinhardt-Hlopis. **Poisson image editing**. IMAGE PROCESSING ON LINE, 6:300–325, 2016. DOI: 10.5201/ipol.2016.163
7. P. D. S. Figueiredo Celestino Gomes, I. Chauvet De Beauchene, N. Panel, S. Lopez, P. De Sepulveda, P. G. Pascutti, E. Solary, and L. Tchertanov. **Insight on mutation-induced resistance from molecular dynamics simulations of the native and mutated CSF-1R and KIT**. PLOS ONE, 11(7), JUL 28 2016. DOI: 10.1371/journal.pone.0160165
8. M. R. Karimi, L. Brosset, J.-M. Ghidaglia, and M. L. Kaminski. **Effect of ullage gas on sloshing. Part II: Local effects of gas-liquid density ratio**. EUROPEAN JOURNAL OF MECHANICS B-FLUIDS, 57:82–100, MAY-JUN 2016. DOI: 10.1016/j.euromechflu.2015.11.011
9. J. Lezama, G. Randall, J.-M. Morel, and R. Grompone von Gioi. **Good continuation in dot patterns: a quantitative approach based on local symmetry and non-accidentalness**. VISION RESEARCH, 126(SI):183–191, SEP 2016. DOI: 10.1016/j.visres.2015.09.004
10. G. Merle, J.-M. Roussel, J.-J. Lesage, V. Perchet, and N. Vayatis. **Quantitative analysis of dynamic fault trees based on the coupling of structure functions and Monte Carlo simulation**. QUALITY AND RELIABILITY ENGINEERING INTERNATIONAL, 32(1):7–18, FEB 2016. DOI: 10.1002/qre.1728
11. M. Nikolova. **Relationship between the optimal solutions of least squares, regularized with $l(0)$ -norm and constrained by k -sparsity**. APPLIED AND COMPUTATIONAL HARMONIC ANALYSIS, 41(1, SI):237–265, JUL 2016. DOI: 10.1016/j.acha.2015.10.010
12. D. Sarkar, E. Contal, N. Vayatis, and F. Dias. **Prediction and optimization of wave energy converter arrays using a machine learning approach**. RENEWABLE ENERGY, 97:504–517, NOV 2016. DOI: 10.1016/j.renene.2016.05.083

2017

1. J. Anger, E. Meinhardt-Holzapfel. ***Implementation of local Fourier burst accumulation for video deblurring***, IMAGE PROCESSING ON LINE, 7:56–64, 2017. DOI: 10.5201/ipol.2017.197
2. M. Breden, L. Desvillettes, and K. Fellner. ***Smoothness of moments of the solutions of discrete coagulation equations with diffusion***. MONATSHEFTE FÜR MATHEMATIK, 183(3):437–463, JUL 2017. DOI: 10.1007/s00605-016-0969-y
3. K. Carrapatoso, L. Desvillettes, and L. He. ***Estimates for the large time behavior of the Landau equation in the Coulomb case***. ARCHIVE FOR RATIONAL MECHANICS AND ANALYSIS, 224(2):381–420, MAY 2017. DOI: 10.1007/s00205-017-1078-3
4. B. Charlier, N. Charon, and A. Trouvé. ***The F-shape framework for the variability analysis of functional shapes***. FOUNDATIONS OF COMPUTATIONAL MATHEMATICS, 17(2):287–357, APR 2017. DOI: 10.1007/s10208-015-9288-2
5. N. Chatron, B. Chalmond, A. Trouvé, E. Benoit, H. Caruel, V. Lattard, and L. Tchertanov. ***Identification of the functional states of human vitamin K epoxide reductase from molecular dynamics simulations***. RSC ADVANCES, 7(82):52071–52090, 2017. DOI: 10.1039/c7ra07463h
6. J. Costes, J. M. Ghidaglia, and J. Breil. ***Mesh regularization for an ALE code based on the limitation of the Lagrangian mesh velocity***. INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS, 85(10):599–615, DEC 10 2017. DOI: 10.1002/fld.4394
7. L. Devilliers, S. Allassonnière, A. Trouvé, and X. Pennec. ***Template estimation in computational anatomy: frechet means top and quotient spaces are not consistent***. SIAM JOURNAL ON IMAGING SCIENCES, 10(3):1139–1169, 2017. DOI: 10.1137/16111083931
8. F. Dias, J.-M. Ghidaglia. ***Slamming: recent progress in the evaluation of impact pressures***. ANNUAL REVIEW OF FLUID MECHANICS, 50(1):243–273, JAN 2018. DOI: 10.1146/annurev-fluid-010816-060121
9. J. Flesch, R. Laraki, V. Perchet. ***Approachability of convex sets in generalized quitting games***, GAMES AND ECONOMIC BEHAVIOR, 2017. DOI: 0.1016/j.geb.2017.12.007
10. B. Galerne and A. Leclaire. ***Texture inpainting using efficient Gaussian conditional simulation***. SIAM JOURNAL ON IMAGING SCIENCES, 10(3):1446–1474, 2017. DOI: 10.1137/16M1109047
11. F. Laus, M. Nikolova, J. Persch, and G. Steidl. ***A nonlocal denoising algorithm for manifold-valued images using second order statistics***. SIAM JOURNAL ON IMAGING SCIENCES, 10(1):416–448, 2017. DOI: 10.1137/16M1087114
12. J. Lezama, G. Randall, J.-M. Morel, R. Grompone von Gioi. ***An unsupervised algorithm for detecting good continuation in dot patterns***, IMAGE PROCESSING ON LINE, 7:81–92, 2017. DOI: 10.5201/ipol.2017.176
13. R. Palomares, E. Meinhardt-Holzapfel, C. Ballester, G. Haro. ***FALDOI: a new minimization strategy for large displacement variational optical flow***, JOURNAL OF MATHEMATICAL IMAGING AND VISION, 58(1):27–46, MAY 2017. DOI: 10.1007/s10851-016-0688-y
14. N. Pierazzo, J.-M. Morel, G. Facciolo. ***Multi-scale DCT denoising***, IMAGE PROCESSING ON LINE, 7:288–308, 2017. DOI: 10.5201/ipol.2017.201
15. D.-Chen Soncco, C. Barbanson, M. Nikolova, A. Almansa, and Y. Ferrec. ***Fast and accurate multiplicative decomposition for fringe removal in interferometric images***. IEEE TRANSACTIONS ON COMPUTATIONAL IMAGING, 3(2):187–201, JUN 2017. DOI: 10.1109/TCI.2017.2678279
16. Z. Tang, R. Grompone von Gioi, P. Monasse, and J.-M. Morel. ***A precision analysis of camera distortion models***. IEEE TRANSACTIONS ON IMAGE PROCESSING, 26(6):2694–2704, JUN 2017. DOI: 10.1109/TIP.2017.2686001

2018

1. T. Alazard, ***Boundary observability of gravity water waves***, ANNALES DE L INSTITUT HENRI POINCARÉ. ANALYSE NON LINÉAIRE, 35(3):751–778, 2018.
2. I. Bargiolas, J. Audiffren, N. Vayatis, P.-P. Vidal, S. Buffat, A. P. Yelnik, and D. Ricard. ***On the importance of local dynamics in statokinetics: A multivariate approach for postural control evaluation in elderly***. PLOS ONE, 13(2) FEB 2018.
3. A. Buades, R. Grompone von Gioi, and J. Navarro. ***Joint contours, corner and T-junction detection: An approach inspired by the mammal visual system***. JOURNAL OF MATHEMATICAL IMAGING AND VISION, 60(3):341–354, MAR 2018.
4. F. Dias and J.-M. Ghidaglia. ***Slamming: recent progress in the evaluation of impact pressures***. In: S.H. Davis, P. Moin (eds), ANNUAL REVIEW OF FLUID MECHANICS, 50:243–273, 2018.

5. B. Gris, S. Durrleman, and A. Trouvé. *A sub-Riemannian modular framework for diffeomorphism-based analysis of shape ensembles*. SIAM JOURNAL ON IMAGING SCIENCES, 11(1):802–833, 2018.
6. L. Raad, A. Davy, A. Desolneux and J.-M. Morel, *A survey of exemplar-based texture synthesis*, ANNALS OF MATHEMATICAL SCIENCES AND APPLICATIONS, 3(1): 89-148, 2018.
7. R. Lemonnier, K. Scaman, N. Vayatis. *Spectral bounds in random graphs applied to spreading phenomena and percolation*. ADVANCES IN APPLIED PROBABILITY, 50:2, JUN 2018.