

Publications et Travaux

Didier CHAUCHEAU

17 mars 2025

1 Articles publiés ou à paraître

Ordre à partir du plus récent.

- [1] Boucher, M., Chauveau D. and Zani, M. (2025), Largest magnitude for off-diagonal auto-correlation coefficients in high dimensional framework. *Statistical Papers* (to appear).
- [2] Chauveau D. and Vandekerckhove, P. (2025), Entropy-Based Burn-in Time Analysis and Ranking for (A)MCMC Algorithms in High Dimension. *SIAM/ASA Journal on Uncertainty Quantification*, <https://doi.org/10.1137/23M1611932>.
- [3] D. Chauveau, B. Garel, and S. Mercier. (2019) Testing for univariate two-component Gaussian mixture in practice. *Journal de la Société Française de Statistique*, **Vol. 160**, n°1, 86–113.
- [4] Le Gac A.-L., Lafon-Placette C., Chauveau D., Ségura V., Delaunay A., Fichot R., Marron N., Le Jan I., Berthelot A., Bodineau G., Bastien J.-C., Brignolas F., Maury S. (2018). Winter-dormant shoot apical meristem in poplar trees shows environmental epigenetic memory, *Journal of Experimental Botany*, **69**, 20, Pages 4821–4837, <https://doi.org/10.1093/jxb/ery271>
- [5] Lafon-Placette C., Le Gac A.-L., Chauveau D., Ségura V., Delaunay A., Lesage-Descauses M.-C., Humme I., Jesson B., Le Thiec D., Bogeat-Triboulot M.-B., Brignolas F., Maury S. (2018). Changes in the epigenome and transcriptome of the poplar shoot apical meristem in response to water availability affect preferentially hormone pathways. *Journal of Experimental Botany*, **69**, 3, 537–551 [dx.doi.org/10.1093/jxb/erx409](https://doi.org/10.1093/jxb/erx409)
- [6] Bordes L. and Chauveau D. (2016). Stochastic EM-like Algorithms for Fitting Finite Mixture of Lifetime Regression Models Under Right Censoring, In *JSM Proceedings*, Section on Nonparametric Statistics. Alexandria, VA : American Statistical Association. 1735–1746.
- [7] Chauveau D., and Hoang, V. T. L. (2016), Nonparametric mixture models with conditionally independent multivariate component densities, *Computational Statistics and Data Analysis* **103**, 1–16. [dx.doi.org/10.1016/j.csda.2016.04.013](https://doi.org/10.1016/j.csda.2016.04.013)
- [8] Bordes, L. and Chauveau D. (2016), Stochastic EM algorithms for parametric and semiparametric mixture models for right-censored lifetime data. *Computational Statistics*, **31**, 4, 1513–1538. DOI : <http://link.springer.com/article/10.1007/s00180-016-0661-7>

- [9] Chauveau D., Hunter D. R., Levine M. (2015). Semi-Parametric Estimation for Conditional Independence Multivariate Finite Mixture Models. *Statistics Surveys*, **9**, 1–31. DOI : <http://dx.doi.org/10.1214/15-SS108>
- [10] D. Chauveau, N. P. A. Saby, T. G. Orton, B. Lemerrier, C. Walter, and D. Arrouays (2014). Large-scale simultaneous hypothesis testing in monitoring carbon content from french soil database : A semi-parametric mixture approach. *Geoderma* 219–220, 117–124.
- [11] Chauveau D. and Vandekerckhove, P. (2014), Simulation Based Nearest Neighbor Entropy Estimation for (Adaptive) MCMC Evaluation, In *JSM Proceedings*, Statistical Computing Section. Alexandria, VA : American Statistical Association. 2816–2827.
- [12] Didier Chauveau et Stéphane Cordier (2013), Le recrutement local dans les universités : variable suivant les disciplines et stable dans le temps. *Images des Mathématiques*, CNRS. <http://images.math.cnrs.fr/recrutement-local.html>
- [13] Chauveau, D. and Vandekerckhove, P. (2013), Smoothness of Metropolis-Hastings algorithm and application to entropy estimation. *ESAIM : Probability and Statistics*, **17** (2013) 419–431. DOI : <http://dx.doi.org/10.1051/ps/2012004>
- [14] Levine, M., Hunter, D. R., Chauveau, D. (2011), Maximum Smoothed Likelihood for Multivariate Mixtures. *Biometrika* **98**, 2, 403–416. DOI : <http://dx.doi.org/10.1093/biomet/asq079>
- [15] Benaglia, T., Chauveau, D. and Hunter, D. R. (2011), Bandwidth Selection in an EM-like algorithm for nonparametric multivariate mixtures. in *Nonparametric Statistics and Mixture Models : A Festschrift in Honor of Thomas P. Hettmansperger*, D.R. Hunter, D. Richards and J.L. Rosenberger (Eds.), pages 15–27, World Scientific Publishing Co.
- [16] Bordes L., Chauveau, D. (2010), *Some Algorithms to Fit some Reliability Mixture Models under Censoring*, Proceedings of the 19th International Conference on Computational Statistics, Paris France. Lechevallier, Yves ; Saporta, Gilbert (Eds.), Springer.
- [17] Benaglia T., Chauveau D., Hunter D. R., Young D. S., *mixtools : An R Package for Analyzing Mixture Models*, Journal of Statistical Software **32** (2009), 1–29. <http://www.jstatsoft.org/v32/i06/>
- [18] Benaglia, T., Chauveau, D. and Hunter, D. R. (2009), An EM-like algorithm for semi- and non-parametric estimation in multivariate mixtures, *J. Comput. Graph. Statist.* **18**, no. 2, 505–526. <http://dx.doi.org/10.1198/jcgs.2009.07175>
- [19] Chauveau, D. et Vandekerckhove, P. (2007), A Monte Carlo estimation of the entropy for Markov chains, *Methodology and Computing in Applied Probability*, **9**, 1, 133–149. <http://hal.archives-ouvertes.fr/hal-00140942>
- [20] Bordes, L., Chauveau, D. and Vandekerckhove, P. (2007), A Stochastic EM algorithm for a semiparametric mixture model, *Computational Statistics and Data Analysis*, **51**, 5429–5443. <http://hal.archives-ouvertes.fr/hal-00018493>
- [21] Chauveau, D. and Diebolt, J. (2003), Estimation of the asymptotic variance in the CLT for Markov chains, *Stochastic Models*, **19**, 4, 449–465.

<http://hal.archives-ouvertes.fr/hal-00202574>

- [22] Altaleb, A. and Chauveau, D. (2002), Bayesian analysis of the Logit model and comparison of two Metropolis-Hastings strategies, *Computational Statistics and Data Analysis*, **39**, 2, 137–152.
- [23] Chauveau, D. and Vandekerkhove, P. (2002), Improving convergence of the Hastings-Metropolis algorithm with an adaptive proposal, *Scandinavian Journal of Statistics*, **29**, 1, 13–29.
- [24] Chauveau, D. et Vandekerkhove, P. (2001), Algorithmes de Hastings-Metropolis en interaction, *C. R. Acad. Sci. Paris*, t. **333**, Série I, p. 881–884.
- [25] Chauveau, D. and Diebolt, J. (1999), An Automated Stopping Rule for MCMC Convergence assessment, *Computational Statistics*, **14**, 3, 419–442.
- [26] Chauveau, D. et Vandekerkhove, P. (1999), Un Algorithme de Hastings-Metropolis avec apprentissage séquentiel, *C. R. Acad. Sci. Paris*, t. **329**, Série I, p. 173–176.
- [27] Muri, F., Chauveau, D., Cellier, D. (1998), Convergence Assessment in Latent Variable Models : DNA Applications. In *Discretization and MCMC convergence assessment* (C.P. Robert Ed.), Lecture Notes in Statistics no 135, Springer-Verlag, New York **Chap. 6**, 127–146.
- [28] Chauveau, D., Diebolt, J. and Robert, C.P. (1998) Control by the Central Limit Theorem. In *Discretization and MCMC convergence assessment* (C.P. Robert Ed.), Lecture Notes in Statistics no 135, Springer-Verlag, New York, **Chap. 5**, 99–126.
- [29] Celeux, G., Chauveau, D. and Diebolt, J. (1996), Stochastic versions of the EM algorithm : An Experimental Study in the Mixture Case, *J. Statist. Comput. Simul.* **55**, 287–314.
- [30] Chauveau, D., Martin, C. F., van Rooij, A. C. and Ruymgaart, F. H. (1996), Discrete Signed Mixtures of exponentials, *Commun. Statist. – Stochastic Models*, **12**, no 2, 245–263.
- [31] Chauveau, D. (1995), A Stochastic EM Algorithm for Mixtures with Censored Data, *Journal of Statistical Planning Inference*, **46**, 1–25.
- [32] Chauveau, D., van Rooij, A., Ruymgaart, F. (1994), Regularized Inversion of Noisy Laplace Transforms, *Advances in Applied Math.*, **15**, 186–201.
- [33] Chauveau, D. (1992), Algorithmes EM et SEM pour un Mélange Censuré de distributions de défaillances, Application à la Fiabilité, *Rev. Statistique Appliquée*, **40**, 67–76.

2 Développement de logiciels

- [34] Didier Chauveau and Houssam Alrachid (2019). **EntropyMCMC** : An R Package for MCMC Simulation and Convergence Evaluation using Entropy and Kullback Divergence Estimation.
<https://CRAN.R-project.org/package=EntropyMCMC>
- [35] Young, D. S., Benaglia, T., Chauveau, D., Elmore, R. T., Hettmansperger, T. P., Hunter, D. R., Thomas, H., and Xuan, F. (2007) **mixtools** : Tools for mixture models, R package version 0.3.0.

<https://CRAN.R-project.org/package=mixtools>

- [36] Réalisation et publication en ligne d’une boîte à outil logicielle pour le diagnostic automatique de la convergence des algorithmes MCMC (1998). Codes en C et Mathematica.

Articles en préparation

- [37] Didier Chauveau, F. Gosselin, Thierno Diallo (2025), *Extended Sampled Posterior Internal Goodness-of-fit p-value for Bayesian Checking of Hierarchical Models*
- [38] Boucher, M., Chauveau D. and Zani, M. (2025), Coherence of high-dimensional random matrix in a Gaussian case : GP-GPU implementation .

3 Discussions d’articles

- [39] Bordes, L. and Chauveau, D. (2014), Discussion of : EM-based likelihood inference for some lifetime distributions based on left truncated and right censored data and associated model discrimination, by N. Balakrishnan and D. Mitra, *South African Statistical Journal*, **48**, 197–200.
- [40] Chauveau, D. (1997), in discussion of : The EM algorithm – An old folk song sung to a fast new tune, par Meng, X.L. et Van Dyk, D., *J. Royal Statistical Society, série B*, **59** :3, 511–567.

4 Rapports techniques et prépublications de travaux soumis ou incomplètement publiés

- Chauveau, D. (1991), *Extension des Algorithmes EM et SEM à la Reconnaissance de Mélanges Censurés de Distributions de Défaillances*. Thèse de Doctorat, Université Paris-Sud, Orsay, France.
- Bon, J.L., Bretagnolle, J., Chauveau, D., Jakubowicz, P., Pamphile, P. et Raoult, J.P. (1993), *Calcul séquentiel de fiabilité à partir d’approximations exponentielles*. Rapport technique Université Paris-Sud (contrat EDF groupe ESF).
- J.P. Raoult, D. Chauveau, C. Coccozza, M. Roussignol (1995), *Modèles de Durée de Survie Applicables à la Mécanique sous Contraintes d’Environnement*, Rapport technique Université Marne-la-Vallée (contrat EDF).
- Chauveau, D. and Diebolt, J. (1998) *An Automated Stopping Rule for MCMC Convergence assessment*, Rapport de Recherche RR-3566, INRIA Rhône-Alpes.
- Chauveau, D. and Diebolt, J. (2000), *Stability properties for a product Markov chain*, prépublication no 06/2000, Université Marne-la-Vallée.
- Chauveau, D. et Vandekerckhove, P. (2001), Interacting Hastings-Metropolis algorithms, prépublication no 08/2001, Université Marne-la-Vallée.
- Chauveau, D. (2001), *User’s guide to the CLTC software*, Université Marne-la-Vallée. (Manuel d’utilisation distribué en ligne sur <http://www.univ-orleans.fr/mapmo/membres/chauveau/pgm/cltc/cltc.html>).

- Chauveau, D. (2001), *Méthodes de Monte Carlo par chaînes de Markov et algorithmes de restauration de données*, mémoire d'**Habilitation à Diriger des Recherches**, Université Marne-la-Vallée.
- Menvielle, M., Roussignol, M., and Chauveau, D. (2005), MCMC inversion method for discontinuity detection in one-dimensional situations, soumis.
- Desjardins, V., Foki, J., Chauveau, D. et Delmas, J.-F. (2009). Statistical analysis of mother-infant (3 to 9 months) perceptive system communication. Preprint HAL <http://hal.archives-ouvertes.fr/hal-00474646>
- Foki, J., Chauveau, D. et Delmas, J.-F. (2009). *Analyse de signaux mesurant le développement du système perceptif d'un bébé*
- Foki, J., Chauveau, D. et Delmas, J.-F. (2009). *Test of agreement between several partitions*
- Chauveau D. and Hunter D. R. (2013), ECM and MM algorithms for mixtures with constrained parameters, Preprint HAL <http://hal.archives-ouvertes.fr/hal-00625285>
- Chauveau D. and Vandekerkhove, P. (2014), The Nearest Neighbor entropy estimate : an adequate tool for adaptive MCMC evaluation ; Preprint HAL <http://hal.archives-ouvertes.fr/hal-01068081>
- Chauveau, D. and Hunter, D. R. (2019). *Doubly Smoothed MLE and MM algorithm for multivariate nonparametric mixtures consistent estimation.*