

## Articles in Journals

- Renard, P. and Allard, D. (2011) Connectivity metrics for subsurface flow and transport, *Advances in Water Resources*, doi :10.1016/j.advwatres.2011.12.001
- Allard, D., D'Or, D. and Froideveaux, R. Letter to the Editor : Response to W. Li and C. Zhang, *European Journal of Soil Science*, doi : 10.1111/j.1365-2389.2011.01414.x
- Allard, D., D'Or, D. and Froideveaux, R. An efficient maximum entropy approach for categorical variable prediction, *European Journal of Soil Science*, **61**, 381-293. doi :10.1111/j.1365-2389.2011.01362.x.
- Flecher, C., Allard, D. and Naveau P. Truncated skew-normal distributions : moments, estimation by weighted moments and application to climatic data, *Metron, Special Issue on Skew-symmetric and flexible distribution*, **LXVIII**, 3, 331-345.
- Flecher, C., Naveau P., Allard D. and Brisson, N. (2010) A Stochastic Daily Weather Generator for Skewed Data, *Water Resource Research*, **46**, W07519. doi :10.1029/2009WR008098.
- Gabriel, E., Allard, D. and Bacro, J.-N. (2010) Estimating and Testing Zones of Abrupt Change for Spatial Data, *Statistics and Computing*, **21**, 107-120. doi :10.1007/s11222-009-9151-x.
- Flecher, C., Naveau, Ph. and Allard, D. (2009) Estimating the Closed Skew-Normal distributions parameters using weighted moments, *Statistics and Probability Letters*, **79**, 1977-1984. doi :10.1016/j.spl.2009.06.004.
- Bel, L., Allard, D., J.M. Laurent, Cheddadi, R. & Bar-Hen, A. (2008) CART algorithm for spatial data : Application to environmental and ecological data, *Computational Statistics and Data Analysis*. doi :10.1016/j.csda.2008.09.012
- Garrigues, S., Allard, D. & Baret, F., (2008) Modeling Temporal Changes in Surface Spatial Heterogeneity over an Agricultural site, *Remote Sensing of Environment*, **112**, 588-602. doi :10.1016/j.rse.2007.05.014
- Gabriel, E. & Allard, D. (2008) Evaluating the Sampling Pattern When Detecting Zones of Abrupt Change, *Environmental and Ecological Statistics*, **15**, 469-489. doi : 10.1007/s10651-007-0067-3s
- Garrigues, S., Allard, D., Baret, F. & Morissette, J. (2008) Multivariate Quantification of Landscape Spatial Heterogeneity using Variogram Models, *Remote Sensing of Environment*, **112**, 216-230.
- Gabriel, E., Allard, D., Mary, B. & Guérif, M., (2007) Detecting zones of abrupt change in soil data, with an application to an agricultural field, *European Journal of Soil Science*, **58**, 1273-1284.
- Garrigues, S., Allard, D. & Baret, F. (2007) Using first and second order variograms for characterizing landscape spatial structures from remote sensing imagery *IEEE TGARS*, **45**, 1823 - 1834.
- Allard D. & Naveau, P. (2007) A new spatial skew-normal random field model, *Communications in Statistics*, **36**, 1821 - 1834.
- Allard D., Froidevaux R. & Biver, P. (2006) Conditional Simulation of Multi-Type Non Stationary Markov Object Models Respecting Specified Proportions, *Mathematical Geology*, **38**, 959-986.
- Garrigues, S., Allard, D., Baret, F. & Weiss, M. (2006) Influence of the spatial heterogeneity on the non linear Estimation of Leaf Area Index from moderate resolution remote sensing data, *Remote Sensing of Environment*, **105**, 286-298.
- Garrigues, S., Allard, D., Baret, F. & Weiss M. (2006) Quantifying spatial heterogeneity at the landscape scale using variogram models, *Remote Sensing of Environment*, **103**, 81-96.
- Magnussen S., Allard D., & Wulder M. (2006) Poisson Voronoi tiling for finding clusters in spatial point patterns, *Scan. J. For. Res.*, **21**, 239-248.

- Monestiez P., Courault D., Allard D. & Ruget F. (2001) Spatial interpolation of air temperature using environmental context : application to a crop model, *Environmental and Ecological Statistics*, **8**, 297-309.
- Allard D., Brix A., Chadœuf J. & Couteron P. (2001), Testing Local Independence Between two Point Processes, *Biometrics*, **57**, 508-517.
- Senoussi R., Chadœuf J. & Allard D. (2000) Weak Homogenization of Point Processes by Space Deformations, *Advances in Applied Probability*, **32**, 948-959.
- Chadœuf J., Brix A., Pierret A. & Allard D. (2000) Local tests in agricultural research, *Journal of Microscopy*, **200**, 32-41.
- Allard D. (1998), Geostatistical Classification and Class Kriging, *Journal of Geographical Information and Decision Analysis*, **2**, 87-101.
- Allard D. & Fraley Ch. (1997), Non Parametric Maximum Likelihood Estimation of Features in Spatial Point Processes Using Voronoï Tessellation, *Journal of the American Statistical Association*, **92**, 1485-1493.
- Allard D. (1993), Some Connectivity Characteristics of a Boolean Model, *Acta Stereologica*, **12**, 191-196.

### Submitted articles and articles in preparation

- with S. Soubeyrand, Skew-normality for climatic data and dispersal models for plant epidemiology : when application fields drive spatial statistics
- with R. Girard, Spatio-temporal propagation of wind power prediction errors.
- with T. Marchant, Linear estimators for compositional data sets : an axiomatic approach.
- with A. Communian, and P. Renard., Probability aggregation methods in geoscience.

### Edited Book

- Monestiez P., Allard D. & Froidevaux R. (Eds) (1999), *geoENV III : Geostatistics for environmental applications*, Kluwer Academic Publishers, Dordrecht.

### Other refereed Papers

- Allard, D. (In Press) Modeling spatial and spatio-temporal non Gaussian processes, in *Space-Time Processes and Challenges Related to Environmental Problem*, Eds. Porcu, E., Montero, J.-M. and Schlather M., Lecture Notes in Statistics, Springer, (23p.)
- Allard, D. and Brisson, N. (2010) Analyse des sources de d'incertitude et de variabilité. In *Changement climatique, agriculture et forêt en France : simulation d'impacts sur les principales espèces. Le livre vert du projet CLIMATOR (2007-2010)*. N. Brisson et F. Levraut Eds. ADEME. pp 51-62.
- Biver, P. Allard, D. and D'Or, D. (2008), Litho-Type Modeling Using Soft-Probabilities from Seismic Attributes and other Sources of Information, in *Geostats "Santiago 2008"*, Eds. Ortiz, J.M. and Emery, X., Gecamin, pp. 319-328.
- D'or D., Allard, D. Biver, P. Froidevaux, R. and Walgenwitz, A. (2008), Simulating Categorical Random Fields Using the Multinomial Regression Approach, in *Geostats "Santiago 2008"*, Eds. Ortiz, J.M. and Emery, X., Gecamin, pp. 59-68.
- Allard, D. and Garrigues, S. (2008) Spatio-Temporal Modeling of Landscape Variograms, in *Geostatistics "Santiago 2008"*, Eds. Ortiz, J.M. and Emery, X., Gecamin, 449-458.

- Allard, D. & Gabriel, E. (2007), Détection de zones de changement abrupts pour des variables non permanentes du sol : vers la définition de zones homogènes?, in Guérif, M. and King, D., Coords., Editions Quae, Paris, pp. 165–76.
- Allard, D. (2006), Validation d'un modèle géostatistique pour l'interpolation : application à un écoulement pluvieux, in *Statistiques Spatiales*, Eds. Droesbeke, J.-J. et Lejeune, M., Technip, Paris, pp. 403–414.
- Chilès, J.-P. & Allard, D. (2005), Stochastic Simulation of Soil Variation, in *Geographic Information Technologies for Environmental Soil-Landscape Modelling*, Ed. Grunwald, S., CRC Press, Boca Raton, pp. 289-321.
- Bel, L., Laurent, J.M., Bar-Hen, A., Allard, D. & Cheddadi, R. (2005), A spatial extension of CART : Application to classification of ecological data, in *Geostatistics for Environmental Applications*, Eds. P. Renard H. Demougeot-Renard and R. Froidevaux, Springer, pp. 99-109.
- Allard D., Froidevaux R. & Biver P. (2005), Accounting for non-stationarity and interactions in object simulation for reservoir heterogeneity characterization, in *Geostatistics Banff 2004*, Eds. Leuangthong, O., Deutsch, C. V., Springer, pp. 155-164.
- Gabriel E. & Allard D. (2005), Assessing the power of zones of abrupt change detection test, in *Geostatistics Banff 2004*, Eds. Leuangthong, O., Deutsch, C. V., Springer, pp. 1103-1008.
- Garcia M., Allard D., Foulon D. & Delisle S. O. (2005), Fine scale rock properties : Towards the spatial modeling of regionalized probability distribution functions, in *Geostatistics Banff 2004*, Eds. Leuangthong, O., Deutsch, C. V., Springer, pp. 579-590.
- Naveau P. & Allard D. (2005), Modeling skewness in spatial data analysis without data transformation, in *Geostatistics Banff 2004*, Eds. Leuangthong, O., Deutsch, C. V., Springer, pp. 929-931.
- Gabriel, E., Allard, D. & Bacro, J.N. (2004), Detecting Zones of Abrupt Change : application to soil data, in *geoENV IV : Geostatistics for Environmental Applications* Eds. Sanchez Vila, X. Carrera J. and Gomez Hernandez, J.J., Kluwer Academic Publisher, pp. 437-448.
- Courault, D., Oliosio, A., Lagouarde J.-P., Monestiez, P. & Allard, D. (2004), Influence des cultures sur les variables climatiques in *Organisation spatiale des activités agricoles et processus environnementaux*, Eds. Monestiez, P., Lardon S. et Sanguin, B, INRA Editions, pp. 303-320.
- Gleyze J.-F., Bacro, J.-N. & Allard D. (2001), Detecting regions of abrupt change : Wombling procedure and statistical significance, in *geoENV III : Geostatistics for environmental applications*, Eds. Monestiez P., Allard D. and Froidevaux R., Kluwer Academic Publishers, Dordrecht, pp. 311-322.
- Allard D. & Monestiez P. (1999), Geostatistical Segmentation of Rainfall Data, in *geoENV II : Geostatistics for Environmental Applications*, Eds. Gomez-Hernandez J., Soares A. and Froidevaux R., Kluwer Academic Publishers, Dordrecht, pp. 139-150.
- Monestiez P., Allard D., Navarro Sanchez I. & Courault D. (1999), Kriging with Categorical External Drift : Use of Thematic Maps in Spatial Prediction and Application to Local Climate Interpolation for Agriculture, in *geoENV II : Geostatistics for environmental applications*, Eds. Gomez-Hernandez J., Soares A. and Froidevaux R., Kluwer Academic Publishers, Dordrecht, pp. 163-174.
- Allard D., Armstrong M., & Kleingeld W. J. (1994), The Need for a Connectivity Index in Mining Geostatistics in *Geostatistics for the Next Century*, Ed. R. Dimitrakopoulos, Kluwer Academic Publishers, Dordrecht, pp. 293-302.
- Allard D. (1993), Simulating a Geological Lithofacies with Respect of Connectivity Information Using the Truncated Gaussian Model, in *Geostatistical Simulations*, Eds. M. Armstrong and P. Dowd, Kluwer Academic Publishers, Dordrecht, pp. 197-211.

Allard, D. & Heresim Group (1992). On the connectivity of two random set models : the truncated gaussian and the Boolean, in *Geostatistics Troia '92*, Ed. Soares A., Kluwer Academic Publishers, Dordrecht, pp. 467-478.

### Invited Conferences

Brisson, N., Allard, D. and DequÃ, M. Exploring the uncertainties in climate change impact studies on agriculture : results of the CLIMATOR project, ACCAE 2010, 20-22 octobre, Clermont Ferrand, France

Allard, D. (2008) From geostatistics to spatial statistiscs : advaces and challenges, *8th Conference on Geostatistics for Environmental Applications*, Southampton (GB), September 2008.

Allard, D., Naveau, Ph., Flecher, C. (2008) A skew-normal random field model : properties and estimation, *7th SSIAB Workshop*, Toulouse, May 2008.

Allard D., Gabriel E. and Bacro J.N. Estimating and Testing Zones of Abrupt Changes for Spatial Data : From Local Tests to a Global Test. *WNAR/IMS conference*, Fairbanks (AL, USA), June 2005

Allard D. Stationnarit , structuration et  chelles. Point de vue g ostatistique. *S minaire multi- chelle*, GDR Sigma, Avignon, May 2003.

Allard D. Validation d'un mod le g ostatistique pour l'interpolation : application   un  v nement pluvieux, *Journ es d'etude statistique en stati stiques spatiales*, September 2002, CIRMM.

Allard D. Choix et validation d'un mod le d'interpolation spatiale : exemple de l'evenement pluvieux du 8 mai 1986, en Suisse, *SMAI, congr s national de math matiques appliqu es et industrielles*, Mai 2001, Pompadour.

Allard D. and Chadoeuf J. Testing Spatial Point Process Models Using (pseudo) Bayes Factors, *ENAR Spring Meeting* March 1999, Atlanta, (GA, USA).

### Other selected talks

Allard D., Flecher, C. and Naveau, P. A weather generator for simulating multivariate climatic series. 1st Conference on Spatial Statistics 2011, Enschede (NL), 23-25 March 2011.

D'Or, D., Allard, D. and Froidevaux, R. (2010) Incorporating non stationarity in categorical variables simulations with MCS. 8th Conference on Geostatistics for Environmental Applications, Gent, Belgium, 13-15 September 2010.

Flecher, C., Naveau, Ph. and Allard, D. Estimating the Closed Skew-Normal distributions parameters using weighted moments. METMA 4, Sardinia (IT), September 2008.

Allard D., Gabriel E. and Bacro J.N. "Estimating and Testing Zones of Abrupt Changes for Spatial Data : From Local Tests to a Global Test." Geophysical Statistics Project Lecture Series in Statistics at NCAR Boulder (CO, USA), June 2005

Peyrard N., Allard, D. and Forbes F. "Comparaison de deux mod lisations pour la classification de donn es g ostatistiques", *Journ es de Statistique de la SFdS*, Pau, June 2005.

Allard D., Forbes F. and and Peyrard N. "Comparing Two Models for Clustering Spatial Data", Working Group on Model-based Clustering, Seattle (WA, USA)), July 2004.

Garrigues, S., Allard, D. and Baret, F. "Characterization of Spatial Heterogeneity and Spatial Structure at Landscape Sacle", in Abstract of Association of Geophysical Union Joint Assembly, Montreal (CA), May 2004.

- Garrigues, S., Allard, D. and Baret, F., Weiss, M. "Spatial heterogeneity Characterization for Scaling Non linear Processes" in Abstract of Association of Geophysical Union Joint Assembly, Montreal (CA), May 2004.
- Naveau P., Allard D. and Genton M. "Modeling Skewness in Geosciences : Applications to Kalman filtering and spatial interpolation" Geophysical Statistics Project Lecture Series in Statistics at NCAR Boulder (CO, USA), June 2004.
- Allard D., Baragnon, G. "Détection d'une rupture dans des séries de floraison de pommiers ; approche bayésienne", *Journale de la Mission Changement Climatique et Effet de Serre, Islesur-la-Sorgue*, janvier 2004.
- Baret F., Garrigues S., Allard D., Faivre R. "Estimation of surface characteristics over heterogeneous landscapes from medium resolution sensors", EGS-AGU-EUG Joint Assembly, Nice, April 2003.
- Allard D. Froidevaux, R. and Biver P. "Non stationary reservoir heterogeneity characterisation by simulation of Boolean models" IAMG 2003 Portsmouth, September 2003.
- Garrigues, S., Allard, D. and Baret, F. "Spatial Heterogeneity Characterization fro Scaling Non Linear Processes", in Proceedings of Second SPECTRA Workshop, Noordwijk, October 2003.
- Allard D. "Clustering Geostatistical Data", Working Group on Model-based Clustering and Bayesian Model Selection, Seattle, July 2002.
- Allard D., Gabriel E. and Bacro J.N. "Detecting Zones of Abrupt Change in Gaussian Random Fields : An Application to Precision Agriculture", Working Group on Model-based Clustering and Bayesian Model Selection, Seattle, July 2002.
- Allard D., Gabriel E. and Bacro J.N. "Détection de ruptures dans un champ Gaussien : application à l'agriculture de précision", *Journales de Statistiques de la SFdS*, Brussels, May 2002.
- Garrigues S., Weiss M., Allard D. and Baret F. "Influence of spatial heterogeneity and Scaling on Leaf Area Index Estimates from Remote Sensing Data" in Proceedings of First Symposium of Recent Advances in Quantitative Remote Sensing, Valencia, September 2002
- Weiss, M., de Beaufort, L. Baret, F., Allard, D. Bruguier, N. and Marloie, O. "Mapping LAI measurements at different scales for the validation of large swath satellite sensors. First results for the Valeri project", Workshop CNES, Aussois January 2001.
- Voltz, M., Monestiez, P., Allard, D. and Lagacherie, P. "Using soil map information as a categorical external drift for kriging quantitative soil properties" Conference of the Working Group on Pedometrics of the International Union of Soil Science (IUSS) - Sydney, September 1999.
- Allard D. and Guillot G. "Clustering geostatistical data", Geostat 2000 Congress, Capetown, April 2000.
- Chadœuf J., Brix A., Pierret A. and Allard D. "Local tests in agricultural research", International Conference on Stereology, Spatial Statistics and Stereology (S<sup>4</sup>G), Prague, June 1999.
- Monestiez P. and Allard D. "Use of Thematic Maps in Spatial Prediction : Kriging with Categorical External Drift", French-Danish Workshop *Spatial Statistics and Image Analysis in Biology*, Sandbjerg (Denmark), May 1998.
- Allard D. and Chadœuf J. "Testing Spatial Point Process Models Using Bayes Factors", French-Danish Workshop *Spatial Statistics and Image Analysis in Biology*, Sandbjerg (Denmark), May 1998.
- Chadœuf J., Brix A. and Allard D. "Measuring Local Association Between Two Point Processes", French-Danish Workshop *Spatial Statistics and Image Analysis in Biology*, Sandbjerg (Denmark), May 1998.

Allard D. "A non stationary doubly stochastic point process : the intrinsic log gaussian Cox process", Model-Based Clustering, Spatial Data Analysis, and Bayesian Model selection Workshop, Seattle, July 1997.

Allard D., Monestiez P. and Navarro Sanchez I. (1997), "Spatial Modeling of Temperatures Using Land-Use Data", National Center for Research in Environmental Statistics Seminar, July 1997, University of Washington, Seattle, USA.