



Nathalie Saint-Geours

Junior scientist in applied mathematics for spatial environmental modelling

CURRENT POSITION

I am working as a permanent scientist at Irstea, UMR TETIS, Montpellier, France.

My research is focused on **uncertainty** and **sensitivity analysis** for geo-information and **GIS-based environmental models**. For a complete curriculum, with more details on my research interests, my past and on-going projects, visit my home page :

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CONTACT INFORMATION

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PUBLICATIONS

Refereed journal publications

-  (2013) Ranking sources of uncertainty in flood damage modelling : a case study on the cost-benefit analysis of a flood mitigation project in the Orb Delta. SAINT-GEOURS, N., LAVERGNE, C., BAILLY, J.-S. AND GRELOT, F. *Journal of Flood Risk Management, online first. DOI : 10.1111/jfr3.12068*
-  (2013) Potential of space-borne LiDAR sensors for global bathymetry in coastal and inland waters. ABDALLAH, H., BAILLY, J.-S., BAGHDADI, N., SAINT-GEOURS, N. AND FABRE, F. *IEEE J. Sel. Top. Appl., 6(1) 202-216.*
-  (2012) Change of support in variance-based spatial sensitivity analysis. SAINT-GEOURS, N., LAVERGNE, C., BAILLY, J.-S. AND GRELOT, F. *Mathematical Geosciences, 44(8) 945-958.*
-  (2011) Analyse de sensibilité de Sobol d'un modèle spatialisé pour l'évaluation économique du risque d'inondation. SAINT-GEOURS, N., LAVERGNE, C., BAILLY, J.-S. AND GRELOT, F. *Journal de la Société Française de Statistique, 152(1), 24-46.*
-  (2009) Sensibilité d'une analyse coût-bénéfice : enseignements pour l'évaluation des projets d'atténuation des inondations. GRELOT, F., BAILLY, J.-S., BLANC, C., ERDLENBRUCH, K., MERIAUX, P., SAINT-GEOURS, N. AND TOURMENT, N. *Ingénieries Eau-Agriculture-Territoires, Spécial inondations, 95-108.*

(2012) Guide méthodologique pour la prise en compte des incertitudes dans les ACB appliquées aux projets de prévention du risque d'inondation.


GRELOT, F., SAINT-GEOURS, N., AND BAILLY, J.-S.

(2012) Programme d'actions de prévention des inondations sur les bassins versants de l'Orb et du Libron : compléments à l'étude ACB de 2007.

GRELOT, F. ; ENJALBERT, P. ; AGENAIS, A. ; BAILLY, J. ; BRÉMOND, P. ; LANGER, T., AND SAINT-GEOURS, N. *IRSTEA, Syndicat Mixte Béziers - La Mer*


INTERNATIONAL CONFERENCES

With proceedings paper

 (2013) Estimation of variance-based sensitivity indices with the Contribution to the Sample Mean.


SAINT-GEOURS, N., TARANTOLA, S., KOPUSTINSKAS, V. AND BOLADO-LAVIN, R.

in 7th International Conference on Sensitivity Analysis of Model Output, Nice, France, July 2-4.

 (2013) Sensitivity analysis and uncertainty quantification for environmental models.


CARTAILLER, T., GUAUS, A., JANON, A., MONOD, H., PRIEUR, C. AND SAINT-GEOURS, N.

in Journées MAS de la Société de Mathématiques Appliquées et Industrielles, Clermont-Ferrand, August 29-31.

 (2013) Identifying optimal classification rules for Geographic Object-Based Image Analysis.


ARVOR, D., SAINT-GEOURS, N., DUPUY, S., ANDRÉS, S. AND DURIEUX, L.

in XVI SBSR Brazilian Remote Sensing Symposium, Foz do Iguaçu, Brazil, April 13-18.

 (2011) Analyse de sensibilité d'un modèle d'évaluation économique du risque d'inondation.


SAINT-GEOURS, N., LAVERGNE, C., BAILLY, J.-S. AND GRELOT, F.

in 43ème Journées de Statistique de la SFdS, Gammarth, Tunisia, May 23-27.

 (2011) Sensitivity analysis of spatial models using geostatistical simulation.


SAINT-GEOURS, N., LAVERGNE, C., BAILLY, J.-S. AND GRELOT, F.

in Proceedings of IAMG 2011 conference, Salzburg, Austria, September 5-9, pp. 178-189.

 (2010) Latin Hypercube Sampling of Gaussian random field for Sobol global sensitivity analysis of models with spatial inputs and scalar output.

SAINT-GEOURS, N., BAILLY, J.-S., GRELOT, F. AND LAVERGNE, C.

in Ninth International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Leicester, UK, pp. 81-84.

 (2010) Comparison of three spatial sensitivity analysis techniques.

SAINT-GEOURS, N. AND LILBURNE, L.

in Ninth International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Leicester, UK, pp. 421-424.

(2012) Cost-benefit analysis of a flood mitigation policy : an uncertainty and sensitivity analysis. SAINT-GEOURS, N., LAVERGNE, C., BAILLY, J.-S. AND GRELOT, F. *in EGU General Assembly 2012, Vienna, Austria, April 19-24.*

(2012) A methodology for determining optimal feature subset for classification in object-based image analysis.

ARVOR, D., WIEFELS, A., SAINT-GEOURS, N., ALMEIDA, C., OSE, K., DURIEUX, L. *in XV Symposium SELPER, Cayenne, French Guiana, November 19-23.*


(2010) Sensitivity analysis of simulated LIDAR waveforms according to sensor and water parameters variability. ABDALLAH, H., BAILLY, J.-S., BAGHDADI, N. AND SAINT-GEOURS, N. *in 2010 AGU Fall Meeting, San Francisco, USA, December 13-17.*

(2009) Validity of cost-benefit analysis for flood prevention projects.

GRELOT, F., BAILLY, J.-S. AND SAINT-GEOURS, N. *in EGU General Assembly 2009, Vienna, Austria, April 19-24. Geophysical Research Abstracts, 11.*

OTHER CONFERENCES & WORKSHOPS

On global sensitivity analysis with spatial input/output information :

-  ASPEN Workshop (Sensitivity Analysis & Uncertainty Propagation in Environmental Modelling), Les Houches, April 9th, 2013.
- EDF R&D, Animation scientifique du groupe FCMI, *Châtoux, Feb 05, 2013.* Oral presentation.
- Café des sciences of the BioSP group (INRA), Avignon, Jan 28, 2013. Oral presentation.
- Journées MAS de la Société de Mathématiques Appliquées et Industrielles, *Clermont-Ferrand, Aug 29-31, 2012.*
- Seminar on IPEF Post-graduate Training 2011-2012, *Paris, Jan 26, 2012.* Poster abstract.
- UMR TETIS Post-grad day, *Montpellier, Jan 5, 2012*
- DOCTISS Post-graduate school day, *Montpellier, Mai 19, 2011.* Poster abstract.
- GDR MASCOT NUM Workshop, *Villard-de-Lans, March 23, 2011 (Best student talk award)*
- Seminar of Statistics of Laboratoire Jean Kuntzmann, *Grenoble, Feb 3, 2011*
- Seminar on IPEF Post-graduate Training 2010-2011, *Marne-la-Vallée, Jan 27, 2011*
- UMR TETIS Post-grad day, *Montpellier, Dec 2, 2010*
- ANR COSTA-BRAVA Workshop, *Cadarache, Nov 26, 2010*
- GDR MASCOT-NUM Workshop, *Avignon, March 18, 2010.* Poster abstract.
- Seminar on Uncertainty management - CEA/DEN/DER/LCFR, *Cadarache, Jan 12, 2010*

On uncertainty in flood damage assesment :

- Journées d'étude inter-Zones Ateliers : Risque d'inondation, vulnérabilité et résilience. Regards croisés Loire Rhône, Blois, Dec 3, 2010

On statistical and computer tools for sensitivity analysis of environmental models :

- Statistical and computer tools for post-grad students in Agronomy and Environment of Languedoc-Roussillon, April 28, 2010