

## LIST OF PUBLICATIONS (PEER-REVIEWED)

Julien Straubhaar / October 2020

List available on:  [orcid.org/0000-0003-2718-4332](https://orcid.org/0000-0003-2718-4332)

- 2020**
- V. Dall’Alba, P. Renard, **J. Straubhaar**, B. Issautier, C. Duvail, Y. Caballero (2020) *3D multiple-point statistics simulations of the Roussillon Continental Pliocene aquifer using DeeSse*. Hydrology and Earth System Sciences, DOI: [10.5194/hess-24-4997-2020](https://doi.org/10.5194/hess-24-4997-2020)
  - P. Juda, P. Renard, **J. Straubhaar** (2020) *A framework for the cross-validation of categorical geostatistical simulations*. Earth and Space Science, DOI: [10.1029/2020EA001152](https://doi.org/10.1029/2020EA001152)
  - J. Jiménez-Martínez and A. Alcolea, **J. Straubhaar**, P. Renard (2020) *Impact of phases distribution on mixing and reactions in unsaturated porous media*. Advances in Water Resources, DOI: [10.1016/j.advwatres.2020.103697](https://doi.org/10.1016/j.advwatres.2020.103697)
  - D.-T. Lam, P. Renard, **J. Straubhaar**, J. Kerrou (2020) *Multi-resolution approach to condition categorical multiple-point realizations to dynamic data with iterative ensemble smoothing*. Water Resources Research, DOI: [10.1029/2019WR025875](https://doi.org/10.1029/2019WR025875)
  - **J. Straubhaar**, P. Renard, T. Chugunova (2020) *Multiple-point statistics using multi-resolution images*. Stochastic Environmental Research and Risk Assessment 20, 251-273, DOI: [10.1007/s00477-020-01770-8](https://doi.org/10.1007/s00477-020-01770-8)
- 2019**
- P.-O. Bruna, **J. Straubhaar**, R. Prabhakaran, G. Bertotti, K. Bisdom, G. Mariethoz, M. Meda (2019) *A new methodology to train fracture network simulation using multiple-point statistics*. Solid Earth 10(2), 537-559, DOI: [10.5194/se-10-537-2019](https://doi.org/10.5194/se-10-537-2019)
  - Y. Dagasana, P. Renard, **J. Straubhaar**, O. Erten, E. Topal (2019) *Pilot point optimization of mining boundaries for lateritic metal deposits: finding the trade-off between dilution and ore loss*. Natural Resources Research 28(1), 153-171, DOI: [10.3390/10.1007/s11053-018-9380-9](https://doi.org/10.3390/10.1007/s11053-018-9380-9)
  - **J. Straubhaar**, P. Renard, G. Mariethoz, T. Chugunova, P. Biver (2019) *Fast and interactive editing tools for spatial models*. Mathematical Geosciences 51(1), 109-125, DOI: [10.1007/s11004-018-9766-6](https://doi.org/10.1007/s11004-018-9766-6)
- 2018**
- C. Jäggli, **J. Straubhaar**, P. Renard (2018) *Parallelized adaptive importance sampling for solving inverse problems*. Frontiers in Earth Science 6, 203, DOI: [10.3389/feart.2018.00203](https://doi.org/10.3389/feart.2018.00203)
  - A. A. S. Barfod, T. N. Vilhelmsen, F. Jørgensen, A. V. Christiansen, A.-S. Høyer, **J. Straubhaar**, I. Møller (2018) *Contributions to uncertainty related to hydrostratigraphic modeling using multiple-point statistics*. Hydrology and Earth System Sciences 22(10), 5485-5508, DOI: [10.5194/hess-22-5485-2018](https://doi.org/10.5194/hess-22-5485-2018)
  - A. A. S. Barfod, I. Møller, A. V. Christiansen, A.-S. Høyer, J. Hoffmann, **J. Straubhaar**, J. Caers (2018) *Hydrostratigraphic modeling using multiple-point statistics and airborne transient electromagnetic methods*. Hydrology and Earth System Sciences 22(6), 3351-3373, DOI: [10.5194/hess-22-3351-2018](https://doi.org/10.5194/hess-22-3351-2018)
  - Y. Dagasana, P. Renard, **J. Straubhaar**, O. Erten, E. Topal (2018) *Automatic parameter tuning of multiple-point statistical simulations for lateritic bauxite deposits*. Minerals, 8(5), DOI: [10.3390/min8050220](https://doi.org/10.3390/min8050220)
  - F. Oriani, R. Mehrotra, G. Mariethoz, **J. Straubhaar**, A. Sharma, P. Renard (2018) *Simulating rainfall time-series: how to account for statistical variability at multiple scales?*. Stochastic Environmental Research and Risk Assessment 32(2), 321-340, DOI: [10.1007/s00477-017-1414-z](https://doi.org/10.1007/s00477-017-1414-z)
- 2017**
- F. Oriani, N. Ohana-Levi, F. Marra, **J. Straubhaar**, G. Mariethoz, P. Renard, A. Karnieli, E. Morin (2017) *Simulating small-scale rainfall fields conditioned by weather state and elevation: a data-driven approach based on rainfall radar images*. Water Resources Research 53(10), 8512-8532, DOI: [10.1002/2017WR020876](https://doi.org/10.1002/2017WR020876)
  - C. Jäggli, **J. Straubhaar**, P. Renard (2017) *Posterior population expansion for solving inverse problems*. Water Resources Research 53(4), 2902-2916, DOI: [10.1002/2016WR019550](https://doi.org/10.1002/2016WR019550)

- 2016**
- F. Oriani, A. Borghi, **J. Straubhaar**, G. Mariethoz, P. Renard (2016) *Missing data simulation inside flow rate time-series using multiple-point statistics*. Environmental Modelling & Software 86, 264-276, DOI: [10.1016/j.envsoft.2016.10.002](https://doi.org/10.1016/j.envsoft.2016.10.002)
  - G. Rongier, P. Collon, P. Renard, **J. Straubhaar**, J. Sausse (2016) *Comparing connected structures in ensemble of random fields*. Advances in Water Resources 96, 145-169, DOI: [10.1016/j.advwatres.2016.07.008](https://doi.org/10.1016/j.advwatres.2016.07.008)
  - **J. Straubhaar**, P. Renard, G. Mariethoz (2016) *Conditioning multiple-point statistics simulations to block data*. Spatial Statistics 16, 53-71, DOI: [10.1016/j.spasta.2016.02.005](https://doi.org/10.1016/j.spasta.2016.02.005)
- 2015**
- G. Pirot, **J. Straubhaar**, P. Renard (2015) *A pseudo genetic model of coarse braided-river deposits*. Water Resources Research 51(12), 9595-9611, DOI: [10.1002/2015WR017078](https://doi.org/10.1002/2015WR017078)
  - G. Pirot, P. Renard, E. Huber, **J. Straubhaar**, P. Huggenberger (2015) *Influence of conceptual Model uncertainty on contaminant transport forecasting in braided river aquifers*. Journal of Hydrology 531(1,SI), 124-141, DOI: [10.1016/j.jhydrol.2015.07.036](https://doi.org/10.1016/j.jhydrol.2015.07.036)
  - G. Mariethoz, **J. Straubhaar**, P. Renard, T. Chugunova, P. Biver (2015) *Constraining distance-based multipoint simulations to proportions and trends*. Environmental Modelling & Software 72, 184-197, DOI: [10.1016/j.envsoft.2015.07.007](https://doi.org/10.1016/j.envsoft.2015.07.007)
  - N. Dickson, J.-C. Comte, P. Renard, **J. Straubhaar**, J. McKinley, U. Ofterdinger (2015) *Integrating aerial geophysical data in multiple-point statistics simulations to assist groundwater flow models*. Hydrogeology Journal 23(5), 883-900, DOI: [10.1007/s10040-015-1258-x](https://doi.org/10.1007/s10040-015-1258-x)
- 2014**
- T. Lochbühler, G. Pirot, **J. Straubhaar**, N. Linde (2014) *Conditioning of multiple-point statistics facies simulations to tomographic images*. Mathematical Geosciences 46(5), 625-645, DOI: [10.1007/s11004-013-9484-z](https://doi.org/10.1007/s11004-013-9484-z)
  - G. Pirot, **J. Straubhaar**, P. Renard (2014) *Simulation of braided river elevation model time series with multiple-point statistics*. Geomorphology 214, 148-156, DOI: [10.1016/j.geomorph.2014.01.022](https://doi.org/10.1016/j.geomorph.2014.01.022)
  - **J. Straubhaar**, D. Malinverni (2014) *Addressing conditioning data in multiple-point statistics simulation algorithms based on a multiple grid approach*. Mathematical Geosciences 46(2), 187-204, DOI: [10.1007/s11004-013-9479-9](https://doi.org/10.1007/s11004-013-9479-9)
  - F. Oriani, **J. Straubhaar**, P. Renard, G. Mariethoz (2014) *Simulation of rainfall time series from different climatic regions using the direct sampling technique*. Hydrology and Earth System Sciences 18, 3015-3031, DOI: [10.5194/hess-18-3015-2014](https://doi.org/10.5194/hess-18-3015-2014)
- 2013**
- E. Meerschman, G. Pirot, G. Mariethoz, **J. Straubhaar**, M. Van Meirvenne, P. Renard (2013) *A practical guide to performing multiple-point statistical simulations with the Direct Sampling algorithm*. Computers & Geosciences 52, 307-324, DOI: [10.1016/j.cageo.2012.09.019](https://doi.org/10.1016/j.cageo.2012.09.019)
  - **J. Straubhaar**, A. Walgenwitz, P. Renard (2013) *Parallel Multiple-point Statistics Algorithm Based on List and Tree Structures*. Mathematical Geosciences 45(2), 131-147, DOI: [10.1007/s11004-012-9437-y](https://doi.org/10.1007/s11004-012-9437-y)
- 2012**
- A. Comunian, P. Renard, **J. Straubhaar** (2012) *3D multiple-point statistics simulation using 2D training images*. Computers & Geosciences 40, 49-65, DOI: [10.1016/j.cageo.2011.07.009](https://doi.org/10.1016/j.cageo.2011.07.009)
  - O. Besson, **J. Straubhaar** (2012) *Wind driven 3D Navier-Stokes circulation in the Atlantic*. [arXiv:1207.0486 \[math.NA\]](https://arxiv.org/abs/1207.0486)
- 2011**
- P. Renard, **J. Straubhaar**, J. Caers, G. Mariethoz (2011) *Conditioning Facies Simulations with Connectivity Data*. Mathematical Geosciences 43(8), 879-903, DOI: [10.1007/s11004-011-9363-4](https://doi.org/10.1007/s11004-011-9363-4)
  - G. Mariethoz, P. Renard, **J. Straubhaar** (2011) *Extrapolating the Fractal Characteristics of an Image Using Scale-Invariant Multiple-Point Statistics*. Mathematical Geosciences 43(7), 783-797, DOI: [10.1007/s11004-011-9362-5](https://doi.org/10.1007/s11004-011-9362-5)
  - A. Comunian, P. Renard, **J. Straubhaar**, P. Bayer (2011) *Three-dimensional high resolution fluvio-glacial aquifer analog: Part 2: geostatistical modeling*. Journal of Hydrology 405(1-2), 10-23, DOI: [10.1016/j.jhydrol.2011.03.037](https://doi.org/10.1016/j.jhydrol.2011.03.037)
  - **J. Straubhaar**, P. Renard, G. Mariethoz, R. Froidevaux, O. Besson (2011) *An Improved Parallel Multiple-Point Algorithm Using a List Approach*. Mathematical Geosciences 43(3), 305-328, DOI: [10.1007/s11004-011-9328-7](https://doi.org/10.1007/s11004-011-9328-7)
- 2010**
- G. Mariethoz, P. Renard, **J. Straubhaar** (2010) *The Direct Sampling method to perform multiple-point geostatistical*

*simulation*. Water Resources Research 46, W11536, DOI: [10.1029/2008WR007621](https://doi.org/10.1029/2008WR007621)

- 2008** • **J. Straubhaar** (2008) *Parallel preconditioners for the conjugate gradient algorithm using Gram-Schmidt and least squares methods*. Parallel Computing 34(10), 551-569, DOI: [10.1016/j.parco.2008.06.001](https://doi.org/10.1016/j.parco.2008.06.001)
- 2007** • **J. Straubhaar** (2007) *Preconditioners for the conjugate gradient algorithm using Gram-Schmidt and least squares methods*. International Journal of Computer Mathematics 84(1), 89-108, DOI: [10.1080/00207160601173621](https://doi.org/10.1080/00207160601173621)