

Dr. Jonathan SCHUITE

Independent consultant in Earth Sciences based in Terrasson – Lavilledieu, France
Founder of [TerraScience](#)

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HIGHER EDUCATION

- 2013-2016 **PhD thesis in Geosciences**
Subject: *On the use of surface deformation and tiltmeters to characterize fractured reservoirs across scales.*
Advisors: Prof. Olivier Bour & Dr. Laurent Longuevergne
Defended on December 2nd, 2016
Location : UMR-CNRS 6118 Géosciences Rennes, *Université de Rennes 1 (France)*
- 2012-2013 **Master degree in Water Resources**
with major in Quantitative and Qualitative Hydrogeology
Université Montpellier 2 (France)
- 2011-2012 **First year of master in Hydrology and Hydrogeology**
Uppsala Universitet (Sweden)
Sponsored by the European student mobility program ERASMUS
- 2008-2011 **Bachelor degree in Earth and Environmental Sciences**
Ecole et Observatoire des Sciences de la Terre (EOST),
Université de Strasbourg (France)

WORKING EXPERIENCE IN ACADEMIC ENVIRONMENTS

Since November 2019

Independent consultant and research scientist in geosciences,
TerraScience (France)
Activities: Consulting, Technical studies, Research and Development,
Scientific animation.

January 2018 to July 2019

Postdoctoral researcher at MINES ParisTech,
Center for Geosciences, Fontainebleau (France).
Research project: *On the transformation of climatic signals by regional hydrosystems.*

----- *Traveling break in South America: exploration, road tripping, backpacking...* -----

December 2016 to May 2017

Research engineer at Géosciences Rennes,
Université de Rennes 1 (France).

From November 2013 to December 2016

PhD student at Géosciences Rennes
Université de Rennes 1 (France).

From February to May 2015

Teaching assistant at Université de Rennes 1 (France).
Leader of exercise sessions in hydrology and geomorphology.
Assisting teachers during field training in geophysics, geomorphology
and hydrology.
Level: first year of master.

From September to December 2014

Invited PhD student at the Geoscience Department of Virginia Tech,
(Blacksburg, VA, USA)
Activity: 3D finite element modeling of transient poro-elastic
deformation in and around a fault zone to assess information content
of surface tilt data, using the multi-physics software Abaqus/CAE.
Supervisor: Prof. Thomas J. Burbey

From January to July 2013

Research intern at HydroSciences Montpellier (France) and at Institut
PPRIME (Poitiers, France).
Subject: *Modeling transport properties of the New-Caledonian
fractured peridotites (SW Pacific).*

PUBLICATIONS

Lilli, M. A., D. Efstathiou, D. Moraetis, **J. Schuite**, S. D. Nerantzaki, N. P. Nikolaidis (2020), A multi-disciplinary approach to understand hydrologic and geochemical processes at Koiliaris Critical Zone Observatory, *Water*, 12 (9), 2474, doi: [10.3390/w12092474](https://doi.org/10.3390/w12092474).

Flipo N., Gallois N., Labarthe B., Baratelli F., Viennot P., **Schuite, J.**, et al. (2019), Pluri-annual water budget on the Seine basin: past, current and future trends, The Seine River Basin, In: *The Handbook of Environmental Chemistry*, Springer, Berlin, Heidelberg.

Schuite, J., N. Flipo, N. Massei, A. Rivière and F. Baratelli (2019), Improving the spectral analysis of hydrological signals to efficiently constrain watershed properties, *Water Resources Research*, 55 (5), 4043-4065, doi: [10.1029/2018WR024579](https://doi.org/10.1029/2018WR024579).

Schuite, J., L. Longuevergne, O. Bour, T. J. Burbey, F. Boudin, N. Lavenant and P. Davy (2017), Understanding the hydromechanical behavior of a fault zone from transient surface tilt and fluid pressure observations at hourly time scales, *Water Resources Research*, 53 (12), 10558-10582, doi:[10.1002/2017WR020588](https://doi.org/10.1002/2017WR020588).

Schuite, J., L. Longuevergne, O. Bour, N. Guihéneuf, M. W. Becker, M. Cole, T. J. Burbey, N. Lavenant and F. Boudin (2017), Combining periodic hydraulic tests and surface tilt measurements to explore in situ fracture hydromechanics, *Journal of Geophysical Research: Solid Earth*, 122, 6046-6066, doi:[10.1002/2017JB014045](https://doi.org/10.1002/2017JB014045).

Schuite, J., L. Longuevergne, O. Bour, F. Boudin, S. Durand and N. Lavenant (2015), Inferring field-scale properties of a fractured aquifer from ground surface deformation during a well test, *Geophysical Research Letters*, 42, 10696–10703, doi:[10.1002/2015GL066387](https://doi.org/10.1002/2015GL066387).

COMMUNICATIONS IN INTERNATIONAL CONGRESSES

Oral communications

Schuite, J., N. Flipo, A. Rivière and N. Massei, Frequency-analysis of hydrological data, *TERENO International Conference*, october 2018, Berlin, Germany.

Schuite, J., L. Longuevergne, O. Bour, N. Guihéneuf, M. W. Becker, M. Cole, T. J. Burbey, N. Lavenant and F. Boudin, Development of an experimental approach to explore in situ fracture hydromechanics with ground surface tiltmeters and periodic fluid pressure perturbations, *EGU General Assembly*, April 2017, Vienna, Austria. Oral EGU2017-7638.

Schuite, J., L. Longuevergne, O. Bour, N. Lavenant and F. Boudin, Tiltmeters as tools for characterizing geometrical and hydrodynamical properties of fractured crystalline aquifers and fault zones, *AGU Fall Meeting 2014*, December 2014, San Francisco, CA, USA. pp.H43O-06.

Poster communications

Schuite, J., N. Flipo, N. Massei, A. Rivière and F. Baratelli, A refined description of climatic signal transformation by hydrosystems using spectral analysis, *EGU General Assembly*, April 2019, Vienna, Austria. Poster EGU2019-8975.

Schuite, J., C. Roques, L. Longuevergne and P. Davy, How can we characterize fault zones in the Critical Zone? Insights from three innovatives hydromechanical standpoints, *TERENO International Conference*, october 2018, Berlin, Germany.

Schuite, J., L. Longuevergne, O. Bour, T. J. Burbey and F. Boudin, Constraining geometrical, hydrodynamical and mechanical properties of a fault zone at hourly time scales from ground surface tilt data, *EGU General Assembly*, April 2017, Vienna, Austria. Poster EGU2017-7985.

Schuite, J., L. Longuevergne, O. Bour, F. Boudin and S. Durand, Implementing ground surface deformation tools to characterize field-scale properties of a fractured aquifer during a short hydraulic test, *EGU General Assembly*, April 2016, Vienna, Austria. Poster EGU2016-2074.

ADDITIONAL TRAINING

- July 2015 **CNRS scientific workshop (summer school of the French National Research Center)**
Subject: *Flow and transport in porous and fractured media: development, protection, management and sequestration of subsurface fluids.*
Lectures, seminars, posters sessions and field experiments (total: 2 weeks/91 hours).
Location: Institut d'Études Scientifiques de Cargèse, Corsica (France).
- March 2015 **Training at École Supérieure du Professorat et de l'Education (ESPE) de Bretagne**
Subject: *Teaching practices*
Total: 48 hours.
- March 2015 **"Prévention et Secours Civiques de niveau 1 (PSC1)",
standing for "Prevention of hazards and First Aid training, level 1".**
Total: 10 hours.
by La Croix-Rouge française (French Red Cross).

COMPUTING SKILLS

Office

- Microsoft Office: Word, Excel et PowerPoint (common use).
- Frequent user of the document preparation system LaTeX.
- Good knowledge of the vector graphics editor Inkscape.

Programming and scientific computing

- Advanced user of MATLAB® (very frequent usage for data visualization, analysis and processing, as well as scientific computation and graphics edition).
- Significant experience with programming languages such as C and FORTRAN 77/90.
- Experience with running shared memory supercomputing systems (via LINUX interface).

Modeling tools

- Experienced user of the multi-physics software Abaqus/CAE®.
- Familiar with COMSOL Multiphysics®, MODFLOW and associated packages (MODPATH, MT3DMS) via graphical interfaces PMWIN, Visual Modflow and GMS.
- Familiar with the river hydraulics simulator HEC-RAS.

LINGUISTIC SKILLS

French Mother tongue.

English Full working proficiency.

Dutch & Catalan

Able to follow and feed everyday-life conversations.

Swedish & Spanish
Basics.

VOLUNTEERING

August 2010 (4 weeks)

Volunteer for a development mission in Togo, West Africa.

Activities: Teach free holiday classes to children aged 10 to 14 (French, Maths and Environmental Sciences), and conduct an AIDS information campaign in a rural area.

PERSONAL INTERESTS

Culture Cinema, music, teaching, politics, foreign languages, plays, etc.

Nature Astronomy, hiking and mountain biking.

Sport Tennis, biking.