

Curriculum Vitae

ACKERER Philippe, 58 years, Full Professor - Directeur de Recherche, Centre National de la Recherche Scientifique (CNRS) at Lab. of Hydrology and Geochemistry (LHyGeS) STRASBOURG, France (e-mail: ackerer@unistra.fr)

Philippe Ackerer applied and adapted enhanced numerical methods like mixed and discontinuous finite elements to groundwater flow and quality modelling, including density driven flow and unsaturated flow. He also worked on parameter estimation using gradient based method and adjoint state equations. He developed an original downscaling parametrization for groundwater flow parameter estimation. Recently, these methods were applied to evaluate the climate change impacts on groundwater resources in the upper Rhine aquifer. He published 86 papers in peer reviewed journals.

Education

- 1982 Civil Engineer, Ecole National du Génie de l'Eau et de l'Environnement de Strasbourg (Engees), Strasbourg, France.
- 1985 PhD, Fluid Mechanics, Université Louis Pasteur, Strasbourg (Supervisor : W. Kinzelbach, Univ. Stuttgart, Germany).
- 1993 Habilité à Diriger des Recherches, Université Louis Pasteur, Strasbourg.

Recent Expertise and Management activities

- 2016 Expert for IAEA on Groundwater Modelling at TEPCO's Fukushima Daiichi Nuclear Power Station.
- 2015 Expert for the Qatar National Science Foundation for the hydrogeology laboratory.
- 2014 - ... Expert for the Funding for National Science - Fonds de la Recherche Scientifique – FNRS, Belgium.
- 2013 – 2016 Member of the National Committee in charge of the evaluation and recruitment of researchers for the French National Research Center (CNRS).
- 2013- European Community Expert for the Horizon 2020 Marie Curie-Slodowska Fellowship program.
- 2012 - ... Expert for Ministry of Research and University - Ministero dell'Istruzione, dell'Università e della Ricerca et de Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, Italy (2-3 projets/an).
- 2013 - Head of the Ecole Doctorale 'Sciences de la Terre et de l'Environnement de Strasbourg', Strasbourg University.
- 2009 - 2012 Member of the Scientific Committee of the 'Institut de Radioprotection et de Sureté Nucléaire (IRSN)'.

Ongoing Scientific project management

- 2016 – 2020 Co-PI of the international project on Qatar's aquifer modelling.
- 2016 – 2017 PI of the international ECOSUD project on the modelling of the aquifer La Pampa, Buenos Aires.
- 2015 – 2017 PI of the Workpackage, 'Surface/subsurface hydrology and water resources', project 'HYDRO-Geochemical behavior of CRITICAL Zone at STrengbach Observatory' funded by the French National Research Agency (ANR).

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8 Most relevant publications

P. Ackerer, N. Trottier, F. Delay (2014). Flow in double-porosity aquifers: parameter estimation using an adaptive multiscale method **Advances in Water Resources**(IF 1.8).

Majdalani S., Ackerer P., (2011) Identification of groundwater parameters using an adaptative multiscale method. **Groundwater**, 49, 3. doi: 10.1111/j.1745-6584.2010.00750.

Ackerer, P., Delay, F. (2010). Inversion of a set of well-test interferences in a fractured limestone aquifer by using an automatic downscaling parameterization technique. **Journal of Hydrology**, 389 (1-2), pp. 42-56.

Konz M., P. Ackerer, A. Younes, P. Huggenberger, E. Zechner (2009). Two-dimensional stable-layered laboratory-scale experiments for testing density-coupled flow models, **Water Resources Research**, 45, W02404, doi:10.1029/2008WR007118.

Hayek, M., Ackerer P., Sonnendrücker E. (2008). A new refinement indicator for adaptive parameterization: Application to the estimation of the diffusion coefficient in an elliptic problem, **Journal of Computational and Applied Mathematics**, 224 (1), pp. 307-319.

Ackerer, P., Younes, A. (2008). Efficient approximations for the simulation of density driven flow in porous media. **Advances in Water Resources**, 31 (1), pp. 15-27.

Younes A, Ackerer P, (2008). Solving the advection-dispersion equation with discontinuous Galerkin and multipoint flux approximation methods on unstructured meshes **International Journal for Numerical Methods in Fluids**, 58, (6), pp 687-708.

Delay F, Ackerer P., Danquigny C., (2005). Simulating Solute Transport in Porous or Fractured Formations Using Random Walk Particle Tracking: A Review. **Vadose Zone J.** 4: 360-379.

5 relevant publications of the period 2011-2015

Marinoni M.; Delay F., Ackerer P., Riva M., Guadagnini A., Identification of groundwater flow parameters using reciprocal data from hydraulic interference tests. **Journal of Hydrology**. <http://dx.doi.org/10.1016/j.hydro.2015.05.019>

Toloni L., F. Lehmann, P. Ackerer, (2014). A Predictive Model for the Transfer of TiO₂ Nanoparticles in Saturated Porous Media: Water Velocity Effect. **Journal of Contaminant Hydrology**, 171, 42-48.

Ackerer P., Trottier N., Delay F.(2014). Flow in double-porosity aquifers: parameter estimation using an adaptive multiscale method. **Advances in Water Resources**, 73, 108–122.

Fahs M., Younes A., Ackerer P. An Efficient Implementation of the Method of Lines for Multicomponent Reactive Transport Equations (2011). **Water Air Soil Pollut.**, 215, 1-4, 273-283. doi: 10.1007/s11270-010-0477.

Fajraoui N., Ramasomanana F., Younes A., Mara T., Ackerer P., Guadagnini A. (2011) Use of Global Sensitivity Analysis and Polynomial Chaos Expansion for Interpretation of Non-reactive Transport Experiments in Laboratory-Scale Porous Media. **Water Resour. Res.**, 47, W02521, 14 PP. doi: 10.1029/2010WR009639

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