

CV - Peter van der Keur, GEUS



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Name Peter van der Keur
Date of Birth March 27, 1960
Nationality Dutch
Education M.Sc, Geographical Institute, University of Copenhagen / Institute of Hydrology, Uppsala University, and Swedish Agricultural University (SLU) 1993. Specialisation: simulation of unsaturated water flow in soils. Ph.D., Geographical Institute, University of Copenhagen. Topic: Use of remote sensing data in hydrological modelling.

Employment Record

Year	Organisation	Position and Responsibilities
2001-date	Geological Survey of Denmark and Greenland (GEUS)	Senior Research hydrologist (since 2008)

Main interests and competences

Unsaturated zone hydrological modelling of water flow and solute transport, especially pesticides and nitrate. Soil-vegetation-atmosphere modelling, evaporation and transpiration processes. Sensitivity and uncertainty assessments in hydrological modelling, especially using Monte Carlo techniques.

Selected Experience Record –

PRECIOUS: Evaluation of implications of future climate changes for the risk assessment of pesticides leaching to the aquatic environment. Project involves simulation of pesticide leaching using MACRO and DAISY in conjunction with the MIKE-SHE groundwater model. 2008-2010

KUPA-CLAY: Evaluation of a method for identification of vulnerable clayey areas in Denmark with respect to pesticide leaching to groundwater aquifers. The project involves simulation of pesticide leaching using the dual porosity model MACRO. 2008-2009. www.kupa.dk

EU-FP6 NeWater project (New Approaches to Adaptive Water Management under Uncertainty). My involvement in this project is 1. leader of workpackage on capacity building, development of guidance and training material that supports implementation of adaptive water management in 7 NeWater case studies; and, 2. participate in development of uncertainty guidelines for water managers and practitioners within the context of adaptive water management. 2005-2009. <http://www.newater.uos.de>

EU-FP5 HarmoniRiB project (development of methodologies for quantifying uncertainty and its propagation for use in water management at the basin scale. My involvement in this project was to test developed techniques in the Odense river basin (one of the 7 case study basins). 2003-2006. www.harmonirib.com

KUPA-SAND: Vulnerability assessment for pesticide leaching for sandy soils in Denmark (KUPA-I). My contribution to this project is the development and operation of a modelling framework in support of quantification of pesticide leaching under the conditions defined in the project. The modelling framework relied heavily on a Monte Carlo type of modelling approach. 2001-2003. www.kupa.dk

SLUSE (Sustainable Land Use and Natural Resource Management): a DANCED funded capacity building programme aiming to strengthen existing Master level educational activities at University of Copenhagen (KU), The (former) Royal Veterinary and Agricultural University (KVL) and Roskilde University Centre (RUC), within sustainable land use and natural resource management in developing countries. In this programme, I was involved in developing training / educational material on the subject of using hydrological modelling in water management in developing countries. In this context I was involved in capacity building

missions in Malaysia, Thailand and South Africa in collaboration with local universities. 1999-2000.
<http://www.sluse.life.ku.dk/>

RS-model: RS-Model was a remote sensing (RS) research program within the framework of the Earth Observation Program and funded by the Danish Space Board Committee, the Danish Agricultural and Veterinary Research Council and the Danish Technical Research Council. My involvement here was the development of a module to the DAISY rootzone model in order to enable use of remote sensing data for simulation of transpiration. 1998-1999. <http://www.geogr.ku.dk/projects/rsmodel/>

Scientific publications – selected references

International journals

Van der Keur, P., Henriksen, H.J., Refsgaard, J.C., Brugnach, M., Pahl-Wostl, C., Dewulf, A. & Buiteveld, H. Identification of Major Sources of Uncertainty in Current IWRM Practice Illustrated for the Rhine basin. *Water Resources Management* (DOI 10.1007/s11269-008-9248-6).

Iversen, B.V., van der Keur, P. and Vosgerau (2008). Hydrogeological Relationships of Sandy Deposits: Modeling of Two-Dimensional Unsaturated Water and Pesticide Transport. *J. Environ.Qual.* 37:1909-1917. <http://doi:10.2134/jeq2006.0200>.

Jacobsen, C.S., van der Keur, P., Iversen, B.V., Rosenberg, P., Barlebo, H.C., Torp, S., Vosgerau, H., Juhler, R.K., Erntsen, V., Rasmussen, J., Brinch, U.C., and Jacobsen, O.H. Variation of MCPA, Metribuzine, Methyltriazine-amine and Glyphosat degradation, sorption, mineralisation and leaching in different soil horizons. *Environmental Pollution* (10.1016/j.envpol.2008.06.002)

Van der Keur, P., Hansen, J.R., Hansen, S. and Refsgaard, J.C. (2008) An uncertainty assessment on nitrate leaching from the rootzone using the SVAT model DAISY with data from the Odense river basin. *Vadose Zone J.* 7:10-21. <http://doi:10.2136/vzj2006.0186>

Van der Keur, P. & Iversen, B.V. (2006). Uncertainty in soil physical data at river basin scale. *Hydrology and Earth System Sciences* 10(6): 889-902

Refsgaard, J.C., van der Sluijs, J.P., Brown, J. & van der Keur, P. (2006) A framework for dealing with uncertainty due to model structure error. *Advances in Water Resources* 29(11): 1586-1597.

Boegh, E., Thorsen, M., Butts, M.B., Hansen, S., Christiansen, J.S., van der Keur, P., Abrahamsen, P., Soegaard, H., Schelde, K., Thomsen, A., Hasager, C.B., Jensen, N.O. & Refsgaard, J.C. (2004). Incorporating remote sensing data in physically based distributed agro-hydrological modelling. *J. Hydrol.* 287, 279-299.

Van der Keur, P. van der, Hansen, S. ,Thomsen, A. & Schelde, K. (2001):. Modification of DAISY SVAT model for potential use of remotely sensed data. *Agricultural and Forest Meteorology* 106 (2001) 215-231.

Book chapters with peer review

Brugnach, M., Pahl-Wostl, C., Lindenschmidt, K.E., Janssen, J.A.E.B., Filatova, T., Mouton, A., Holtz, van der Keur, P. and Gaber, N (2009). Complexity and Uncertainty: Rethinking the Modelling Activity. Book chapter 4, based on iEMS Summit workshop: Complexity and uncertainty and a new role of models, held in Vermont 2006, USA. *Environmental Modelling and Software* 3.

Müller, T., Gausset, Q., van der Keur, P., Mertz, O., Oksen, P. & Aalbæk, A. (2001). Integration of plant nutrition and soil fertility in international and interdisciplinary teaching activities on sustainable land use and natural resource management. In Horst, W.J. (eds.). *Plant nutrition – Food security and sustainability of agro-ecosystems*, 1028-1029. Kluwer Academic Publishers.