

CV – PROFESSOR KARSTEN HØGH JENSEN

PERSONAL Born 1952

CONTACT Department of Geosciences and Natural Resource Management, University of Copenhagen
ØSTER VOLDGADE 10, 1350 KØBENHAVN K. Email: khj@ign.ku.dk

EDUCATION Technical University of Denmark, 1983, PhD, Hydrology
Technical University of Denmark, 1977, M.Sc., Hydrology

EMPLOYMENTS

2012 - date University of Copenhagen (Professor)
1979 - 2012 Technical University of Denmark (Researcher, Post doc., Associate Professor, Full Professor)
1988 - 1992 Carl Bro Consulting Group (Permanent Consultant)
1977 - 1987 Danish Hydraulic Institute (Hydrologist, part time)

SABBATICAL LEAVE

2014 Visiting Professor, University of New South Wales, Sydney, Australia (1 month)
1994 - 1995 Chief engineer (Water Quality Institute/DHI)
1992 - 93 Visiting Associate Professor, University of Colorado at Boulder, USA
1987 Visiting scientist, Massachusetts Institute of Technology (MIT), Boston, USA (3 months)

SCIENTIFIC EXPERTISE

Water resources, climate change, geological and hydrogeological investigations, catchment modeling, field experiments and observations.

SELECTED EXPERIENCE RECORD - PROJECT MANAGEMENT

2012 - Head of Geology Section and member of leadership committee of department
2007 - Center Director VILLUM Center of Excellence HOBE
2002 - 2013 Director, International School of Water Resources (FIVA)
2007 - 2012 PhD school director of Faculty of Science

KEY PERSONAL ASSIGNMENTS

2010 - 2014 Member of Research Council, Committee for Sustainable Energy and Environment, Danish Strategic Research Council
2011 - 2013 Member of committee for Young Investigator Programme under the private VILLUM Research Foundation
2010 - 2014 Visiting Professor, China University of Geosciences
2008 - Member of advisory board, Hydrological observatory TERENO, Germany
2007 Panelist member for US National Science Foundation
2004 Search committee American Geophysical Union (Editors for Water Resources Research)
2004 - 2010 Board member, Danish Water Forum
2000 - Member of board of appeal under the Environmental Protection Agency
2000 - Member of unsaturated zone technical committee, American Geophysical Union

HONORS AND AWARDS

2011 G.O. Andrup's Groundwater Prize
2010 Overseas Outstanding Scholar, China University of Geosciences, Wuhan, Appointed by the Chinese Government
2007 Outstanding associate editor award Vadose Zone Journal
1999 - Member of Danish Academy of Technical Science (ATV)
1999 R.W. Jorck's research award
1992 Best paper in the international journal Nordic Hydrology
1992 Fulbright Scholar
1985 Recipient, Young Scientist Award, Technical University of Denmark

EDITORIAL ASSIGNMENTS

2002 - 2018 Associate Editor, Vadose Zone Journal
1999 - 2006 Associate Editor, Water Resources Research
1997 - 2002 Associate Editor, Journal of Hydrology
1995 - 2000 Associate Editor, Hydrogeology Journal, International Association of Hydrogeologists

TEACHING

Instructor of a broad range of BSc, MSc, PhD and post graduate courses at Technical University of Denmark and University of Copenhagen. Supervised 100 MSC thesis projects and 45 PhD thesis projects.

RECENT RESEARCH CONTRACTS

2011	Strategic Research Council (CO-PI, 15 mill DKK)
2011	Villum Foundation (PI, 32.0 mill. DKK)
2010	Ministry of Science, Technology and Innovation (PI, 7.2 mill. DKK)
2009	Strategic Research Council (CO-PI, 20.0 mill. DKK)
2009	Strategic Research Council (CO-PI, 14.4 mill. DKK)
2008	Ministry of Science, Technology and Innovation (PI, 1.9 mill. DKK)
2007	Villum Foundation (PI, 32.8 mill. DKK)
2007	Strategic Research Council (CO-PI, 15.0 mill. DKK)
2007	Geocenter Denmark (PI, 0.5 mill. DKK)
2006	Ministry of Science, Technology and Innovation (PI, 0.6 mill. DKK)
2006	Danish Research Council (PI, 2.6 mill. DKK)

REVIEWER OF RESEARCH PROGRAMS

2016	Leibniz Centre for Agricultural Landscape Research (ZALF), Germany
2015, 2011	Helmholtz Association, Germany
2012, 2013	Institute of Bio- and Geosciences, Research Center Julich, Germany
2011	German Research Foundation
2007	US National Science Foundation
2005	Swedish University of Agricultural Sciences

WORKSHOP AND SYMPOSIUM ORGANIZATION

2015	Co-convener, European Geoscience Union Annual Meeting
2014	Co-convener, Tereno Symposium, Bonn
2013	Co-convener, Joint Danish-German workshop on 'Patterns in Soil-Vegetation-Atmosphere-Systems'
2012	Co-convener, American Geophysical Union Fall Meeting
2012	Convener, Joint Danish-German workshop on hydrological observations and modeling
2008	Convener, coordinator of all hydrogeological sessions, International Geological Congress
2007	Co-convener and co-editor, ModelCARE 2007

REVIEWER OF ACADEMIC POSITIONS

Professorships at University of California, Texas A&M University, Colorado School of Mines, University of Bonn, Uppsala University, Stockholm University, University of British Columbia, Simon Fraser University, Lancaster University

WORKSHOP AND SYMPOSIUM ORGANIZATION

2015	Co-convener, European Geoscience Union Annual Meeting
2014	Co-convener, Tereno Symposium, Bonn
2013	Co-convener, Joint Danish-German workshop on 'Patterns in Soil-Vegetation-Atmosphere-Systems'
2012	Co-convener, American Geophysical Union Fall Meeting
2012	Convener, Joint Danish-German workshop on hydrological observations and modeling
2008	Convener, coordinator of all hydrogeological sessions, International Geological Congress
2007	Co-convener and co-editor, ModelCARE 2007

INVITED PRESENTATIONS

2015	Soil Science Society of America Annual Meeting, Minneapolis, USA
2014	International Tereno Symposium, Bonn, Germany
2009	International Workshop 'Patterns in Soil-Vegetation-Atmosphere Systems: Monitoring, Modeling and Data Assimilation', Aachen 8-10 June, Germany
2008	American Geophysical Union Fall Meeting, San Francisco; USA
2008	CUAHSI Biennial Colloquium on Hydrologic Science and Engineering, USA
2006	Groundwater Governance in Asia, Wuhan, China
2005	Impacts on Tsunami on groundwater, soils and vegetation in coastal regions of Sri Lanka
2004	European Geophysical Union

MISSIONS AND ENGINEERING ASSIGNMENTS

2006, 2010,	Mission to China (Research and capacity building)
2015	
2005	Member of US-NSF mission to Sri Lanka (Research and capacity building in relation to the Tsunami disaster)
2005	Member of Danida mission to Botswana (Formulation of research strategy for the Okavango Delta Management Plan)
2004	Member of Danida mission to Zambia (Formulation of research and education component of water sector support program)

13. June 2016

BIBLIOGRAPHY

Professor Karsten Høgh Jensen

Total publication record

Refereed International Journals: 104.

Contributions to books: 4, one published by AGU; *Monographs: 2*; *Editor/Co-editor for proceedings: 3.*

Danish Journals: 17; *Scientific reports: 19*; *Refereed conference proceedings: 33*; *Conference proceedings: 44.*

[ISI: H-index: 26 Citations: 2100] [Google: H-index: 32 Citations: 3500]

Publication in international journals 2012-2016

Sebok, E., Refsgaard, J.C., Warmink, J.J., Stisen, S., Jensen, K.H. (2016). Using expert elicitation to quantify the water balance and its uncertainties for two nested catchments, *Water Resources Research*.

Rasmussen, J., Madsen, H., Jensen, K.H., Refsgaard, J.C., (2016), Data assimilation in integrated hydrological modelling in the presence of observation bias, *Hydrology and Earth System Sciences*, 20, 2103–2118, doi:10.5194/hess-20-2103-2016.

Karlsson, I.B., Sonnenborg, T.O., Refsgaard, J.C., Trolle, D., Borgesen, C.D., Olesen, J.E., Jeppesen, E., Jensen, K.H. (2016). Combined effects of climate models, hydrological model structures and land use scenarios on hydrological impacts of climate change, *Journal of Hydrology*, 535, 301-317, DOI: 10.1016/j.hydrol.2016.01.089.

Refsgaard, J.C., Sonnenborg, T.O., Butts, M.B., Christensen, J.H., Christensen, S., Drews, M., Jensen, K.H., Jørgensen, F., Jørgensen, L.F., Larsen, M.A.D., Rasmussen, S.H., Seaby, L.P., Seifert, D., Vilhelmsen, T.N. (2016). Climate change impacts on groundwater hydrology – where are the main uncertainties and can they be reduced?, *Hydrological Sciences Journal*, DOI: 10.1080/02626667.2015.1131899.

Larsen, M.A.D., Refsgaard, J.C., Jensen, K.H., Butts, M.B., Stisen, S., Møllerup, M. (2016). Calibration of a distributed hydrology and land surface model using energy flux measurements, *Agricultural and Forest Meteorology*, 217, 74-88, doi:10.1016/j.agrformet.2015.11.012.

Zhang, D., Madsen, H., Ridler, M.E., Refsgaard, J.C., Jensen, K.H. (2015). Impact of uncertainty description on assimilating hydraulic head in the MIKE SHE distributed hydrological model, *Advances in Water Resources*, 86, 400-413.

Lassen, R.N., Plampin, M., Sakaki, T., Illangasekare, T.H., Gudbjerg, J., Sonnenborg, T.O., Jensen, K.H. (2015). Effects of Geologic Heterogeneity on Migration of gaseous CO₂ using Laboratory and Modelling Investigations, *International Journal of Greenhouse Gas Control*, 43, 213-224.

Yang, X., Lassen, R.N., Jensen, K.H., Looms, M.C. (2015). Monitoring CO₂ migration in a shallow sand aquifer using 3D crosshole electrical resistivity tomography, *International Journal of Greenhouse Gas Control*, 42, 534-544.

Karlsson, I.B., Sonnenborg, T.O., Seaby, L.P., Jensen, K.H., Refsgaard, J.C. (2015). The climate change impact of a high-end CO₂-emission scenario on hydrology, *Climate Research*, 64, 39-54, doi: 10.3354/cr01265.

Rasmussen, J., Madsen, H., Jensen, K.H., Refsgaard, J.C. (2015). Data assimilation in integrated hydrological modeling using ensemble Kalman filtering: evaluating the effect of ensemble size and localization on filter performance, *Hydrology and Earth System Sciences*, 19, 2999-3013, doi:10.5194/hess-19-2999-2015.

Lassen, R.N., Sonnenborg, T.O., Jensen, K.H., Looms, M.C. (2015). Monitoring CO₂ gas-phase migration in a shallow sand aquifer using cross-borehole ground penetrating radar, *International Journal of Greenhouse Gas Control*, 37, 287-298.

Haarder, E.B., Jensen, K.H., Binley, A., Nielsen, L., Uglebjerg, T.B., Looms, M.C. (2015). Estimation of recharge from long-term monitoring of saline tracer transport using electrical resistivity tomography, *Vadose Zone Journal*, 14(7), doi:10.2136/vzj2014.08.0110.

Koch, J., Jensen, K.H., Stisen, S. (2015). Towards a true spatial model evaluation in distributed hydrological modeling: Kappa statistics, Fuzzy theory and EOF-analysis benchmarked by the human perception and evaluated against a modeling case study, *Water Resources Research*, 51(2), 1225-1246, DOI: 10.1002/2014WR016607.

Larsen, M.A.D., Refsgaard, J.C., Drews, M., Butts, M., J.C., Jensen, K.H., Christensen, J.H., Christensen, O.B. (2014). Results from a full coupling of the HIRHAM regional climate model and the MIKE SHE hydrological model for a Danish catchment, *Hydrology and Earth System Sciences*, 18, 4733-4749, doi:10.5194/hess-18-

4733-2014.

- Plampin, M., Lassen, R.N., Sakaki, T., Porter, M., Pawar, R., Jensen, K.H., Illangasekare, T. (2014). Heterogeneity-enhanced gas phase formation in shallow aquifers during leakage of CO₂-saturated water from geologic sequestration sites, *Water Resources Research*, 50(12), 9251-9266, doi: 10.1002/2014WR015715
- He, X., Sonnenborg, T., Jørgensen, F., Jensen, K.H., (2014). The effect of training image and secondary data integration with multiple-point geostatistics in groundwater modeling, *Hydrology and Earth System Sciences*, 18, 2943-2954, doi:10.5194/hess-18-2943-2014.
- Koch, J., He, X., Jensen, K.H., Refsgaard, J.C. (2014). Challenges in conditioning a stochastic geological model of a heterogeneous glacial aquifer to a comprehensive soft data set, *Hydrology and Earth System Sciences*, 18, 2907-2923, doi:10.5194/hess-18-2907-2014.
- Karlsson, I.B., Sonnenborg, T., Jensen, K.H., Refsgaard, J.C. (2014). Historical trends in precipitation and stream discharge at the Skjern River catchment, Denmark, *Hydrology and Earth System Sciences*, 18, 595–610, doi:10.5194/hess-18-595-2014.
- Refsgaard J.C., Auken E., Bamberg C.A., Christensen B.S.B., Clausen T., Dalgaard E., Effersø F., Ernsten V., Gertz F., Hansen A.L., He X., Jacobsen B.H., Jensen K.H., Jørgensen F., Jørgensen L.F., Koch J., Nilsson B., Petersen C., De Schepper G., Schamper C., Sørensen K.I., Therrien R., Thirup C., Viezzoli A. (2014). Nitrate reduction in geologically heterogeneous catchments – a framework for assessing the scale of predictive capability of hydrological models. *Science of the Total Environment*, 468–469, 1278–1288, doi:10.1016/j.scitotenv.2013.07.042.
- He, X., Sonnenborg, T., Refsgaard, J.C., Vejen, F., Jensen, K.H. (2013). Evaluation of the value of radar QPE data and rain gauge data for hydrological modeling. *Water Resources Research*, 49, 1–17, doi:10.1002/wrcr.20471.
- He, X., Sonnenborg, T., Jørgensen, F., Høyer, A.-S., Møller, R.R., Jensen, K.H., (2013). Analyzing the effects of geological and parameter uncertainty on prediction of groundwater head and travel time, Accepted for publication in *Hydrology and Earth System Sciences*, 17, 3245-3260, doi:10.5194/hess-17-3245-2013.
- Andreasen, M., Andreasen, L.A., Sonnenborg, T., Bircher, S., Jensen, K.H. (2013). Estimation of regional groundwater recharge using data from a distributed soil moisture network. *Vadose Zone Journal*, 12, p. vzj2013.01.0035, doi:10.2136/vzj2013.01.0035.
- Seaby, L.P., Refsgaard, J.C., Sonnenborg, T., Stisen, S., Christensen, J.H., Jensen, K.H. (2013). Assessment of robustness and significance of climate change signals for an ensemble of distribution-based scaled climate projections. *Journal of Hydrology*, 486, 479-493, DOI:10.1016/j.jhydrol.2013.02.015.
- Hansen, A.L, Refsgaard, J.C., Jensen, K.H., Christensen, B. (2013). Importance of including small-scale tile drain discharge in the calibration of a catchment scale nitrate model, *Water Resources Research*, 49(1), 585-603, DOI: 10.1029/2011WR011783.
- Larsen, M.A.D., Thejll, P., Christensen, J.H., Refsgaard, J.C., Jensen, K.H. (2012). On the role of domain size and resolution in the simulations with the HIRHAM region climate model, *Climate Dynamics*, 40(11-12), 2903-2918, DOI 10.1007/s00382-012-1513-y
- Shu, Y., Villholth, K.G., Jensen, K.H., Stisen, S., Lei, Y. (2012). Integrated hydrological modelling of the North China Plain: options for sustainable groundwater use in the alluvial plain of Mt. Taihang, *Journal of Hydrology*, 464-465, 79-93, <http://dx.doi.org/10.1016/j.jhydrol.2012.06.048>.
- Haarder, E.B., Binley, A., Looms, M.C., Doetsch, J., Nielsen, L., Jensen, K.H. (2012). Comparing plume characteristics inferred from cross-borehole geophysical data, *Vadose Zone Journal*, 11(4), doi:10.2136/vzj2012.003.

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