



CV - Simon Stisen, GEUS

Name Simon Stisen
Date of Birth November 2, 1975
Contact Tlf. +45 38142778 Email: sst@geus.dk
Citizenship Danish
Education **MSc.:** Institute for Environment and Resources, **Technical University of Denmark (DTU)** 1997-2003. Surface- and Groundwater hydrology; modelling; remote sensing.
PhD.: Institute for Geography, **University of Copenhagen**, Denmark, 2003-2007. Remote sensing; hydrological modelling. Ph.d Thesis title: *“Geostationary Remote Sensing in Modelling of Land Surface Hydrology”*

Employment Record

Year	Organisation	Position and Responsibilities
2007-date	Geological Survey of Denmark and Greenland	Researcher: Working with hydrological modelling and remote sensing in Denmark and internationally.

Research profile

- Integrated and distributed hydrological modelling at the catchment scale.
- Remote sensing of hydrological variables for input, calibration and validation of hydrological models.
- Water balance closure at regional to national scale
- Spatial patterns in hydrological modelling.
- Climate change impacts on water resources.
- Direct methods for estimation of actual evapotranspiration using thermal remote sensing based on both polar orbiting and geostationary satellites.

Research Projects

- Leading member of the research project CLIVET concerning climate change impacts on hydrology, wetlands and agriculture in Tanzania (2009-2013), funded by the Consultative Research Committee for Development Research (FFU), Ministry of Foreign Affairs of Denmark (6 M DKR).
- Part of the HOBE project concerning detailed water balance studies including extensive fieldwork and modelling (2007-2015).
- Part of the GEUS research group working on the National Water Resources Model (DK-model 2007-2010)
- A leading member of the national group working on new Danish recommendations for water resources assessment (2010-2011).

Selected Experience Record

- Visiting researcher at University of New South Wales, Sydney - Australia, funded by the Danish research Council (FNU) and the Inge Lehmann foundation (2010). Working with Dr. Matthew McCabe on spatial model calibration using remote sensing data
- 2011 elected Vice-President of the International Commission on Remote Sensing (ICRS) under the International Association of Hydrological Sciences (IAHS)
- Co-supervisor for several PhD. and MSc. Students
- Reviewer for the Scientific Journals: *Remote sensing of Environment, Hydrology and Earth System Sciences (HESS), Journal of Hydrometeorology, Journal of Hydrology, Hydrological Sciences Journal, International Journal of Applied Earth Observation and Geoinformation (JAG), Journal of Selected Topics in Earth Observations and Remote Sensing (JSTARS), Sensors, Remote Sensing, Hydrogeology journal, Journal of Applied Remote Sensing, PEDOSPHERE and Natural Hazards.*

Publications - Simon Stisen, GEUS

International Journal papers (ISI registered)

18 papers in ISI registered international scientific journals with 144 ISI citations (H-index of 8).

Sonnenborg, T.O., Hinsby, K., van Roosmalen, L. and **Stisen**, S. (Accepted in *Climatic Change*, August 2011)
Assessment of climate change impacts on the quantity and quality of a coastal catchment using a coupled ground-water-surface water model

Stisen, S., McCabe, M.F., Refsgaard, J.C., Lerer, S. and Butts, M.B. (2011). Model parameter analysis using remotely sensed pattern information in a multi-constraint framework. *Journal of Hydrology* (in print) doi: 10.1016/j.jhydrol.2011.08.030.

Shu, Y., **Stisen**, S., Jensen, K.H. and Sandholt, I. (2011) Estimation of regional evapotranspiration over the North China Plain using geostationary satellite data. *International Journal of Applied Earth Observation and Geoinformation*, Volume 3, Pages 192-206. doi:10.1016/j.jag.2010.11.002

He, X., Vejen, F., **Stisen**, S., Sonnenborg, T.O. and Jensen, K.H. (2011) An Operational Weather Radar–Based Quantitative Precipitation Estimation and its Application in Catchment Water Resources Modeling. *Vadose Zone Journal*. Volume 10, Pages 8-24. doi:10.2136/vzj2010.0034

Stisen, S., Sonnenborg, T.O., Højberg, A.L., Troldborg, L. and Refsgaard, J.C. (2011) Evaluation of climate input biases and water balance issues using a coupled surface-subsurface model. *Vadose Zone Journal*. Volume 10, Pages 37-53, doi:10.2136/vzj2010.0001.

Nieto, H., Sandholt, I., Aguado, I., Chuvieco, E. and **Stisen**, S. (2011) Air temperature estimation with MSG-SEVIRI data: Calibration and validation of the TVX algorithm for the Iberian Peninsula. *Remote Sensing of Environment*, Volume 115, Pages 107-116. doi:10.1016/j.rse.2010.08.010

Stisen, S. and Sandholt, I. (2010). Evaluation of remote sensing based rainfall products through predictive capability in hydrological runoff modelling. *Hydrological Processes*. Volume 24, Issue 7, Pages 879-891. DOI: 10.1002/hyp.7529

Gondwe, B.R.N., Lerer, S., **Stisen**, S., Marín, L., Rebolledo-Vieyra, M., Merediz-Alonso, G. and Bauer-Gottwein, P. (2010) Hydrogeology of the south-eastern Yucatan Peninsula: New insights from water level measurements, geochemistry, geophysics and remote sensing. *Journal of Hydrology* Volume 389, Issue 1-2, Pages 1-17. DOI: 10.1016/j.jhydrol.2010.04.044

Nygaard, I., Rasmussen, K., Badger, J., Nielsen, T.T., Hansen, L.B., **Stisen**, S., Larsen, S., Mariko, A. and Togola, I. (2010) Using modeling, satellite images and existing global datasets for rapid preliminary assessments of renewable energy resources: The case of Mali. *Renewable and Sustainable Energy Reviews*. Volume 14, pages 2359-2371. DOI: 10.1016/j.rser.2010.04.001

Fensholt, R., Sandholt, I., **Stisen**, S, Proud, S. and Rasmussen, M.O. (2010). Assessment of MODIS sun-sensor geometry variations effect on observed NDVI using MSG SEVIRI geostationary data, *International Journal of Remote Sensing*, Volume 31: Issue 23, Pages 6163 – 6187. DOI: 10.1080/01431160903401387

Stisen, S, Jensen, K.H., Sandholt, I. and Grimes, D.I.F. (2008). A remote sensing driven distributed hydrological model of the Senegal River basin. *Journal of Hydrology*, Volume 354, pages 131-148. DOI: 10.1016/j.jhydrol.2008.03.006

Stisen, S, Sandholt, I., Noergaard, A., Fensholt, R. and Jensen, K.H. (2008). Combining the triangle method with thermal inertia to estimate regional evapotranspiration – Applied to MSG-SEVIRI data in the Senegal River basin. *Remote Sensing of Environment*, Volume 110, Pages 1242–1255. DOI: 10.1016/j.rse.2007.08.013

Stisen, S, Sandholt, I., Noergaard, A., Fensholt, R. and Eklundh, L. (2007). Estimation of Diurnal air temperature using MSG SEVIRI data in West Africa. *Remote Sensing of Environment*, Volume 110, Pages 262-274. DOI: 10.1016/j.rse.2007.02.025

Fensholt, R., Anyamba, A., **Stisen, S.**, Sandholt, I., Pak, E. & Small, J. (2007). Comparisons of compositing period length for vegetation index data from Polar-orbiting and geostationary satellites for the cloud-prone region of West Africa. *Photogrammetric Engineering & Remote Sensing*, Volume 73 (3), Pages 297-309.

Fensholt, R., Sandholt, I., Rasmussen, M.S., **Stisen, S** and Diouf, A. (2006) Evaluation of satellite based primary production modelling in the semi-arid Sahel. *Remote Sensing of Environment*, Volume 105, Pages 173–188. DOI: 10.1016/j.rse.2006.06.011

Fensholt, R., Sandholt, I., **Stisen, S** and Tucker, C.J. (2006). Analysing NDVI for the African continent using the geostationary Meteosat Second Generation SEVIRI sensor. *Remote Sensing of Environment*, Volume 101, Issue 2, Pages 141-282. DOI: 10.1016/j.rse.2005.11.013

Fensholt, R., Sandholt, I. and **Stisen, S** (2006). Evaluating MODIS, MERIS and VEGETATION vegetation indices using in situ measurements in a semi-arid environment. *IEEE Transactions on Geoscience and Remote Sensing*, Volume 44, No. 7, July 2006. DOI: 10.1109/TGRS.2006.875940

Fensholt, R., Nielsen, T.T and **Stisen, S** (2006). Evaluation of AVHRR PAL and GIMMS 10-day composite NDVI time series products using SPOT-4 Vegetation data for the African continent. *International Journal of Remote Sensing*, Volume 27 (13), Pages 2719-2733. DOI: 10.1080/01431160600567761

ISI registered Conference Papers

Stisen, S, Sandholt, I. and Fensholt, R.. (2004). Meteosat second generation data for assessment of surface moisture status. Proceedings of the Second MSG RAO Workshop, 9.-10. Sept. 2004, Salzburg, Austria, ESA SP-582, Volume 582 , Pages 155-160.

Sandholt, I., **Stisen, S, Fensholt, R., Rasmussen, M.O., Noergaard, A., Iversen, K.I., Bondo, T. and Svendsen, S.H.** (2006). MSG SEVIRI data for vegetation monitoring and land surface modeling in Africa. Proceedings of the 3rd MSG RAO Workshop. 15. June 2006. Helsinki, Finland, ESA SP-619, Volume 619, Pages 83-88.

Submitted Papers in review

Shu, Y., Jensen, K.H., Villholt, K.G., **Stisen, S.** and Sandholt, I. (Submitted to *Journal of Hydrology*) Integrated hydrological modeling of the North China Plain: impact of crop irrigation on groundwater in the alluvial plain of Mt. Taihang

Stisen, S. and McCabe, M.F. (Submitted) Analyzing parameter sensitivities in a complex distributed hydrological model using remotely sensed surface temperatures. Remote Sensing and Hydrology 2010 (Proceedings of a symposium held at Jackson Hole, Wyoming, USA, September 2010) (IAHS Publ. 3XX, 2011).

Thesis

Stisen, S. (2007). Geostationary remote sensing in Modelling of land surface hydrology. PhD Thesis, Department of Geology and Geography, University of Copenhagen, Denmark.

Stisen, S. (2003). Application of remote sensing data in distributed hydrological modelling. Master Thesis, Institute of Environment and Resources, Technical University of Denmark, Lyngby.

Popular Articles

Sandholt, I., Rasmussen, K., Fensholt, R., **Stisen**, S., Jensen, K.H. and Refsgaard, J.C. (2006). Vandressourcer - udnyttelse af vand i store flodbassiner. GEOVIDEN - Geologi og Geografi, 2006 nr. 1, GeoCenter Copenhagen. <http://geocenter.dk/publikationer/geoviden/> available online March 2006.

Fensholt, R., Sandholt, I., **Stisen**, S. (2006). Vegetation i Afrika – nye muligheder for satellitmåling. Geografi – Årsskrift om selskabets aktiviteter og geografien ved danske universiteter i 2005, s. 54-60. Det Kongelige Geografiske Selskab 2006.

GEUS reports

Refsgaard, J.C., **Stisen**, S., Højbjerg, A.L., Olsen, M., Henriksen, H.J., Børgesen, C.D., Vejen, F., Kern-Hansen, C. and Blicher-Mathiesen, G. (2011). Vandbalance i Danmark - Vejledning i opgørelse af vandbalance ud fra hydrologiske data for perioden 1990-2010. GEUS rapport 2011/77.

Højbjerg, A.L., Nyegaard, P., **Stisen**, S., Troldborg, L., Ondracek, M., Christensen, B.S.B. (2010). DK-model2009, Modelopstilling og kalibrering for Midtjylland. GEUS rapport 2010/78.

Højbjerg, A.L., Ondracek, M., Nyegaard, P., Troldborg, L., **Stisen**, S., Christensen, B.S.B. (2010). DK-model2009, Modelopstilling og kalibrering for Nordjylland. GEUS rapport 2010/79.

Højbjerg, A.L., Troldborg, L., Nyegaard, P., Ondracek, M., **Stisen**, S., Christensen, B.S.B. (2010). DK-model2009, Sammenfatning af opdateringen 2005-2009. GEUS rapport 2010/81.

Højbjerg, A.L., Troldborg, L., Nyegaard, P., Ondracek, M., **Stisen**, S., Christensen, B.S.B., Nørgaard, A. (2008). National Vandressource Model, Sjælland, Lolland, Falster og Møn – Opdatering januar 2008. GEUS rapport 2008/65.

Troldborg, L., Nyegaard, P., **Stisen**, S. (2009). National Vandressource Model, Opdatering af DK-model Bornholm med data fra detailkortlægning. GEUS rapport 2009/2.

Stisen, S., Troldborg, L., Henriksen, H.J. (2008). Screeningsundersøgelse og vandbalanceopgørelse for KE's indvindingsområde. GEUS rapport 2008/81.