

CURRICULUM VITAE – Jonas Olsson

Personal data and current employment

Born: 19 February 1964 in Gudmuntorp, Sweden
Citizenship: Swedish
Languages: Swedish and English (fluent);
Japanese, French and German (fair)

Group Manager at: Research & Development (hydrology)
Swedish Meteorological and Hydrological Institute
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Main fields of research

- » Rainfall-runoff modelling and forecasting
- » Climate change impacts on hydrology
- » Rainfall disaggregation and downscaling
- » Uncertainty in hydrological modelling
- » Nonlinear and scaling approaches in hydrology

Work tasks

- » Scientific Lead in hydrology research
- » Leader and member of research projects
- » Hydrologist on duty for Sweden
- » Author and reviewer of applications, papers, etc.
- » Supervisor of young researchers

Academic degrees

- » **2010** Awarded the title of Reader (Docent) in Water Resources Engineering at the Faculty of Engineering, Lund University, Sweden
- » **1996** Ph.D. in Water Resources Engineering (hydrology) at the Faculty of Engineering, Lund University, Sweden
- » **1989** M.Sc. in Civil Engineering at the Faculty of Engineering, Lund University, Sweden

Employment etc.

- » **2010-2011** Associate research professor at Tokyo Metropolitan University (6 months)
- » **2005, 2007, 2014** Parental leave (3×6 months)
- » **2001** Research associate at Lund University, Sweden
- » **1997-2000** Post-Doc at Kyushu University, Fukuoka, Japan (EU S&T Fellowship)
- » **1989-1996** Doctoral candidate and Research assistant at Lund University, Sweden

Supervision and teaching

- » **2015-present** Lecturer in M.Sc. course *Water, society and climate change* at Lund University
- » **2020** Co-supervision of M.Sc. thesis by Sofia Litsmark, Uppsala University: *Investigating the relationship between circulation patterns and cloudburst character in a changing climate*
- » **2018** Co-supervision of M.Sc. thesis by Samuel Hermelin, Royal Institute of Technology: *Differences in consequences between peak arrivals and movement directions of an extreme rainfall in flood modeling*
- » **2015-2016** Co-supervision of M.Sc. thesis by Cajsa-Lisa Ivarsson, Lund University: *High-resolution ensemble flood forecasting in Høje Å*
- » **2010-2019** Co-supervision of Ph.D. thesis by Kean Foster, Lund University: *Seasonal hydrological forecasting in Sweden*
- » **2009-2011** Co-supervision of M.Sc. thesis by Hiromi Boda, Tokyo Metropolitan University: *Spatio-temporal characteristics of 15-min precipitation in Sweden*
- » **2002-2009** Co-supervision of Ph.D. thesis by Sihem Testouri, Lund University: *Water erosion modelling using fractal rainfall disaggregation*
- » **2002-2003** Co-supervision of M.Sc. thesis by Jörgen Rosberg, Uppsala University: *Modeling phosphorus transport and retention in river networks*
- » **2001-2005** Co-supervision of Ph.D. thesis by Pernilla Öhrström, Lund University: *Unsaturated solute transport*

in a semiarid catchment

- » **2000-2001** Co-supervision of M.Sc. thesis by Izumi Ishikawa, Kyushu University: *Rainfall estimation model in the Chikugo River Basin by statistical atmospheric downscaling using artificial neural networks*
- » **1997-1998** Co-supervision of Ph.D. thesis by Tarek Merabtene, Kyushu University: *Decision Support System for water resources management*
- » **1990-2001** Frequent course assistant in hydraulics and hydrological modelling for M.Sc. students

International work

- » **2007, 2010, 2013** Tokyo Metropolitan University, Tokyo, Japan (1+1+2 months; funded by Scandinavia-Japan Sasakawa Foundation and Royal Academy of Sciences/JSPS)
- » **1992, 2002, 2004** Kyushu University, Fukuoka, Japan (1+1+2 months; funded by Royal Academy of Sciences/JSPS, Scandinavia-Japan Sasakawa Foundation and J. G. Richerts Memorial Foundation)
- » **1993/1994** Université Pierre & Marie Curie, Paris, France (4 months; funded by Åke and Greta Lissheds Foundation)
- » **1991** Politecnico di Milano, Milan, Italy (2 months; funded by Axel and Margaret Ax:son Johnsons Foundation)
- » **Since 1996** Short (>1 month) visits to Institute of Hydrology (Wallingford, UK), Swiss Federal Institute of Technology (ETH) (Zürich, Switzerland), Kyushu University (Fukuoka, Japan), Tokyo Metropolitan University (Tokyo, Japan) and Nara Institute of Science and Technology (Nara, Japan)

Scientific commitments

ASSIGNMENTS & AWARDS

- » **2020** Invited expert in the project *Sustainable water – climate change* by Royal Swedish Academy of Engineering Sciences
- » **2019** Faculty opponent of Barbara Blumentahl, Karlstad University, Techn.Lic. thesis *Precipitation intensity and other factors affecting cloudburst damage*
- » **2017** Ph.D. dissertation board member of Lotten Wiréhn, Linköping University, Ph.D. thesis *Climate vulnerability assessment methodology – A study for Nordic agriculture*
- » **2015** Faculty opponent of Hong Li, University of Oslo, Ph.D. thesis *Hydrological modelling of mountainous and glacierised regions under changing climate*
- » **2014** Faculty opponent of Hjalte Jomo Danielsen Sørup, Technical University of Denmark, Ph.D. thesis *Modelling of spatio-temporal precipitation relevant for urban hydrology with focus on scales, extremes and climate change*
- » **2013** Ph.D. dissertation board member of Claudia Teutschbein, Stockholm University, Ph.D. thesis *Hydrological modelling for climate change impact assessment*
- » **2013** Ph.D. dissertation board member of Tinghai Ou, University of Gothenburg, Ph.D. thesis *Observed and simulated changes in extreme precipitation and cold surges in China: 1961-2005*
- » **2012** Co-author of paper awarded the large prize of Nordic Association for Hydrology for best publication in Hydrology Research during the last 2 years.
- » **2012-present** Deputy Auditor of Nordic Association for Hydrology
- » **2012** Faculty opponent of Noora Veijalainen, Finnish Environment Institute, Ph.D. thesis *Estimation of climate change impacts on hydrology and floods in Finland*
- » **2011-2015** Swedish delegate in the Management Committee of COST Action ES1102 VALUE *Validating and Integrating Downscaling Methods for Climate Change Research*
- » **2009-2013** Steering group member of Swedish Road Authority project *Adaptation of road drainage structures to climate change*
- » **2007** Ph.D. dissertation board member of Amad Mohammad Kalteh, Lund University, Ph.D. thesis *Rainfall-runoff modelling using artificial neural networks (ANNs)*
- » **2005-2010** Swedish delegate in the Management Committee of COST Action 731 *Propagation of Uncertainty in Advanced Meteo-Hydrological Forecast Systems*

INVITED TALKS

- » 2020 Sewer Networks and Climate, Malmö, Sweden
- » 2016 Research and Innovation for Sustainable Stormwater Management, Stockholm, Sweden
- » 2015 Modeling Hydrology, Climate and Land Surface Processes, Lillehammer, Norway
- » 2015 European Geosciences Union General Assembly, Vienna, Austria
- » 2011 Urban Hydrology and Storm Water Management, Lund, Sweden
- » 2011 IUGG, Earth on the Edge: Science for a Sustainable Planet, Melbourne, Australia
- » 2010 KlimatGIS-dagar, Stockholm, Sweden
- » 2009 Water Fairs (VA-mässan), Stockholm, Sweden
- » 2009 Nordic Hydrology, Fundamentals and Market Analysis, Oslo, Norway
- » 2006 Joint COST Action 731 and NetFAM Workshop on Uncertainty in High-Resolution Meteorological and Hydrological Models, Vilnius, Lithuania
- » 2001 International Workshop on Scaling Problems in Hydrology, Austrian Academy of Sciences, Vienna, Austria

CONFERENCES

- » 2020 Nordic Hydrological Conference, Tallinn, Estonia (scientific committee member)
- » 2018 Hydrofractals'18, Constanta, Romania (scientific committee member)
- » 2012 Nordic Hydrological Conference, Oulu, Finland (scientific committee member)
- » 2009 9th European Conference on Applications of Meteorology (ECAM), Toulouse, France (co-convener at the session on Hydrology)
- » 2003 Hydrofractals'03, Ascona, Switzerland (scientific committee member)
- » 1997-2000 European Geophysical Society General Assembly (co-convener (and sometimes chairman) at the session on Nonlinear Processes in Geophysics)
- » 1994 International Workshop on Closing the Gap Between Theory and Practice in Urban Rainfall Applications, St. Moritz, Switzerland (chairman)

REVIEWING

- » **Article manuscripts (since 1996)** Journal of Hydrology (>5); Journal of Geophysical Research (>3); Atmospheric Research (>3); Water Resources Research (>3); Hydrology and Earth System Sciences (>1); Soil Science Society of America Journal (>1); Hydrological Processes (>1); Stochastic Environmental Research and Risk Assessment (>1); Urban Water (>1); International Journal of Climatology (1); Water, Air and Soil Pollution (1); Physics and Chemistry of the Earth (1); Water Science and Technology (1); Journal of Applied Meteorology (1); Nonlinear Processes in Geophysics (1); Journal of Contaminant Hydrology (1); Nordic Hydrology (1); Hydrological Sciences Journal (1); Climatic Change (1); Advances in Geosciences (1); Advances in Water Resources (1); Climatic Change Letters (1); Climate Dynamics (1); Meteorology and Atmospheric Physics (1); Journal of Hydrometeorology (1); Advances in Science and Research (1)
- » **Project applications (since 2000)** Natural Sciences and Engineering Research Council of Canada (4); National Science Foundation, USA (2); Natural Environment Research Council, UK (1); Netherlands Organisation for Scientific Research (1); French National Research Agency (ANR) (1)
- » **Conference contributions** 9th Intl. Conf. on Urban Drainage Modelling (2012); XXVII Nordic Hydrological Conference (2012); 18th World IMACS/MODSIM09 Congress (2009); 11th Intl. Conf. on Urban Drainage (2008)
- » **Book chapters** *Green House Gas Emissions and Climate Change*, ASCE (2011); *Advances in data-based approaches for hydrologic modeling and forecasting*, World Scientific Publishing Company (2008)

Project management

- » **2019-2021** Work Package leader in the EU Water JPI project *GlobalHydroPressure*
- » **2016-2019** Coordinator of the EU Water JPI project MUFFIN *Multi-scale Urban Flood Forecasting*
- » **2016-2017** Work Package leader in the EU Copernicus project Urban SIS *Climate Information for European Cities*
- » **2010-2012** Work Package leader in the EU FP7 project SUDPLAN *Sustainable Urban Development Planner for Climate Change Adaptation*
- » **2010-2014** Project Manager of Formas project HYDRIMFACTS2.0 *Hydrological Climate Impact Scenarios*
- » **2003-2004** Work Package leader in the EU FP5 project CARPE DIEM *Critical Assessment of available Radar Precipitation Estimation techniques and Development of Innovative approaches for Environmental Management*
- » **2001-present** Frequent manager of national research projects

Publications

SCIENTIFIC JOURNALS (PEER-REVIEWED)

- J1. Olsson, J., Berg, P., and R. van de Beek (2021) Visualization of radar-observed rainfall for hydrological risk assessment, *Adv. Sci. Res.*, submitted.
- J2. Dyrddal, A.V., Olsson, J., Toivonen, E., Arnbjerg-Nielsen, K., Post, P., Aniskeviča, S., Thorndahl, S.L., Førland, E., Wern, L., Mačiulytė, V., and A. Mäkelä (2021) Observed changes in heavy daily precipitation over the Nordic-Baltic region, *Int. J. Climatol.*, submitted.
- J3. Nielsen, R., Niemi, T., Thorndahl, S., Hundecha, Y., Kokkonen, T., Schleiss, M., and J. Olsson (2021) Comparison of hydrological and hydrodynamical pluvial flood risk estimation models across multiple scales and catchments, *Water*, submitted.
- J4. Uvo, C.B., Foster, K., and J. Olsson (2021) The spatio-temporal influence of atmospheric teleconnection patterns on hydrology in Sweden, *J. Hydrol. Reg. Stud.*, in press.
- J5. van de Beek, R., Olsson, J., and J. Andersson (2020) Optimal grid resolution for precipitation maps from commercial microwave link networks, *Adv. Sci. Res.*, 17, 79-85, doi: 10.5194/asr-17-79-2020.
- J6. Hosseini, S.H., Hashemi, H., South, N., Aspegren, H., Berndtsson, R., Larsson, R., Olsson, J., Persson, A., Olsson, L., and A. Marmbrandt (2020) Evaluation of a new X-band weather radar for operational use in South Sweden, *Water Sci. Technol.*, 81, 1623-1635, wst2020066, doi: 10.2166/wst.2020.066.
- J7. Schleiss, M., Olsson, J., Berg, P., Niemi, T., Kokkonen, T., Thorndahl, S., Nielsen, R., Ellerbæk Nielsen, J., Bozhinova, D., and S. Pulkkinen (2020) The accuracy of weather radar in heavy rain: a comparative study for Denmark, the Netherlands, Finland and Sweden, *Hydrol. Earth System Sci.*, 24, 3157-3188, doi: 10.5194/hess-24-3157-2020.
- J8. Du, T.L.T., Lee, H., Bui, D.D., Arheimer, B., Li, H.-Y., Olsson, J., Darby, S.E., Sheffield, J., Kim, D., and E. Hwang (2020) Streamflow prediction in “geopolitically ungauged” basins using satellite observations and regionalization at subcontinental scale, *J. Hydrol.*, 588, 125016, doi: 10.1016/j.jhydrol.2020.125016.
- J9. Kalantari, Z., Santos Ferreira, C.S., Page, J., Goldenberg, R., Olsson, J., and G. Destouni (2019) Meeting sustainable development challenges in growing cities: coupled social-ecological systems modeling of land use and water changes, *J. Env. Managem.*, 245, 471-480, doi: 10.1016/j.jenvman.2019.05.086.
- J10. Gidhagen, L., Olsson, J., Amorim, J.H., Asker, C., Belusic, D., Carvalho, A.C., Engardt, M., Hundecha, Y., Körnich, H., Lind, P., Lindstedt, D., Olsson, E., Rosberg, J., Segersson, D., and L. Strömbäck (2019) Towards climate services for European cities: lessons learnt from the Copernicus Climate Change Service Urban SIS, *Urban Clim.*, 31, 100549, doi: 10.1016/j.uclim.2019.100549.
- J11. Persson, M., Selim, T., and J. Olsson (2019) Groundwater contamination risks from point source pollutants in a future climate, *Hydrol. Sci. J.*, 64(13), 1659-1671, doi: 10.1080/02626667.2019.1662022.
- J12. Berg, P., Christensen, O.B., Klehmet, K., Lenderink, G., Olsson, J., Teichmann, C., and W. Yang (2019) Summertime precipitation extremes in a EURO-CORDEX 0.11° ensemble at an hourly resolution, *Natural Hazards Earth System Sci.*, 19, 957-971, doi: 10.5194/nhess-19-957-2019.
- J13. Tanouchi, H., Olsson, J., Lindström, G., Kawamura, A., and H. Amaguchi (2019) Improving urban runoff in multi-basin hydrological simulation by the HYPE model using EEA Urban Atlas: a case study in the Sege River Basin, Sweden, *Hydrology*, 6(1), 28, doi: 10.3390/hydrology6010028.
- J14. Olsson, J., Södling, J., Berg, P., Wern, L., and A. Eronn (2019) Short-duration rainfall extremes in

- Sweden: a regional analysis, *Hydrol. Res.*, nh2019073, doi: 10.2166/nh.2019.073.
- J15. Amorim, J.H., Asker, C., Belusic, D., Carvalho, A.C., Engardt, M., Gidhagen, L., Hundecha, Y., Körnich, H., Lind, P., Olsson, E., Olsson, J., Segersson, D., and L. Strömbäck (2018) Integrated Urban Services for European cities: the Stockholm case, *WMO Bulletin*, 67, 33-40.
- J16. Grahn, T., and J. Olsson (2018) Insured flood damage in Sweden, 1987-2013, *J. Flood Risk Manag.*, e12465, doi: 10.1111/jfr3.12465.
- J17. Foster, K., Uvo, C.B., and J. Olsson (2018) The development and testing of a hydrological seasonal forecast system prototype for predicting spring flood volumes in Swedish rivers, *Hydrol. Earth System Sci.*, 22, 2953-2970, doi: 10.5194/hess-22-2953-2018.
- J18. Selim, T., Persson, M., and J. Olsson (2017) Impact of spatial rainfall resolution on point source solute transport modelling, *Hydrol. Sci. J.*, 62:16, 2587-2596, doi: 10.1080/02626667.2017.1403029.
- J19. Olsson, J., Bengtsson, L., Pers, B.C., Berg, P., Pechlivanidis, I., and H. Körnich (2017) Distance-dependent depth-duration analysis in high-resolution hydro-meteorological ensemble forecasting: a case study in Malmö, Sweden. *Environ. Model. Softw.*, 93, 381-397, doi:10.1016/j.envsoft.2017.03.025.
- J20. Olsson, J., Arheimer, B., Borris, M., Donnelly, C., Foster, K., Nikulin, G., Persson, M., Perttu, A.-M., Uvo, C.B., Viklander, M., and W. Yang (2016) Hydrological climate change impact assessment at small and large scales: key messages from recent progress in Sweden, *Climate*, 4, 39, doi:10.3390/cli4030039.
- J21. Berg, P., Norin, L., and J. Olsson (2016) Creation of a high resolution precipitation data set by merging gridded gauge data and radar observations for Sweden, *J. Hydrol.*, 541, 6-13, doi:10.1016/j.jhydrol.2015.11.031.
- J22. Pechlivanidis, I.G., Olsson, J., Bosshard, T., Sharma, D., and K.C. Sharma (2016) Multi-basin modelling of future hydrological fluxes in the Indian subcontinent, *Water*, 8, 177, doi:10.3390/w8050177.
- J23. Akselsson, C., Olsson, J., Belyazid, S., and R. Capell (2016) Can increased weathering rates due to future warming compensate for base cation losses at whole-tree harvesting?, *Biogeochemistry*, 128, 89-105, doi:10.1007/s10533-016-0196-6.
- J24. Olsson, J., Uvo, C.B., Foster, K., and W. Yang (2016) Technical Note: Initial assessment of a multi-method approach to spring flood forecasting in Sweden, *Hydrol. Earth System Sci.*, 20, 1-9, doi:10.5194/hess-20-1-2016.
- J25. Yang, W., Gardelin, M., Olsson, J., and T. Bosshard (2015) Multi-variable bias correction: application of forest fire risk in present and future climate in Sweden, *Natural Hazards Earth System Sci.*, 15, 2037-2057, doi:10.5194/nhess-15-2037-2015.
- J26. Olsson, J., Berg, P., and A. Kawamura (2015) Impact of RCM spatial resolution on the reproduction of local, sub-daily precipitation, *J. Hydrometeorol.*, 16, 534-547, doi:10.1175/JHM-D-14-0007.
- J27. Pechlivanidis, I.G., Olsson, J., Sharma, D., Bosshard, T., and K.C. Sharma (2015) Assessment of the climate change impacts on the water resources of the Luni region, India, *Global NEST Journal*, 17(1), 29-40.
- J28. Rana, A., Foster, K., Bosshard, T., Olsson, J., and L. Bengtsson (2014) Impact of climate change on rainfall over Mumbai using Distribution-Based Scaling of Global Climate Model projections, *J. Hydrol. Reg. Stud.*, 1, 107-128, doi:10.1016/j.ejrh.2014.06.005.
- J29. Olsson, J., and K. Foster (2014) Short-term precipitation extremes in regional climate simulations for Sweden, *Hydrol. Res.*, 45.3, 479-489, doi:10.2166/nh.2013.206.
- J30. Olsson, J., Simonsson, L., and M. Ridal (2014) Rainfall nowcasting: predictability of short-term extremes in Sweden, *Urban Water J.*, 11, doi:10.1080/1573062X.2013.847465.
- J31. Rana, A., Bengtsson, L., Jothiprakash, D., Singh, W., and J. Olsson (2013) Development of IDF-curves for tropical india by random cascade modeling, *Hydrol. Earth Syst. Sci. Discuss.*, 10, 4709-4738, doi:10.5194/hessd-10-4709-2013.
- J32. Dahné, J., Donnelly, C., and J. Olsson (2013) Post-processing of climate projections for hydrological impact studies, how well is reference state preserved?, *IAHS Publications* 359, 53-59.
- J33. Arnbjerg-Nielsen, K., Willems, P., Olsson, J., Beecham, S., Pathirana, A., Bülow Gregersen, I., Madsen, H., and V.T.V. Nguyen (2013) Impacts of climate change on rainfall extremes and urban drainage systems: a review, *Water Sci. Technol.*, 68, 16-28, doi:10.2166/wst.2013.251.
- J34. Olsson, J., Amaguchi, H., Alsterhag, E., Däverhög, M., Adrian, P.-E., and A. Kawamura (2013) Adaptation to climate change impacts on urban storm water: a case study in Arvika, Sweden, *Clim. Chang.*, 116, 231-247, doi:10.1007/s10584-012-0480-y.
- J35. Olsson, J., Gidhagen, L., Gamerith, V., Gruber, G., Hoppe, H., and P. Kutschera (2012) Downscaling

- of short-term precipitation from Regional Climate Models for sustainable urban planning, *Sustainability*, 4, 866-887, doi:10.3390/su4050866.
- J36. Jebari, S., Berndtsson, R., Olsson, J., and A. Bahri (2012), Soil erosion estimation based on rainfall disaggregation, *J. Hydrol.*, 436-437, 102-110, doi: 10.1016/j.jhydrol.2012.03.001.
- J37. Amaguchi, H., Kawamura, A., Olsson, J., and T. Takasaki (2012) Development and testing of a distributed urban storm runoff event model with a vector-based catchment delineation, *J. Hydrol.*, 420-421, 205-215, doi:10.1016/j.jhydrol.2011.12.003.
- J38. Olsson, J., Willén, U., and A. Kawamura (2012) Downscaling extreme Regional Climate Model (RCM) precipitation for urban hydrological applications, *Hydrol. Res.*, 43, 341-351, doi:10.2166/nh.2012.135.
- J39. Willems, P., Arnbjerg-Nielsen, K., Olsson, J., and V.T.V. Nguyen (2012) Climate change impact assessment on urban rainfall extremes and urban drainage: methods and shortcomings, *Atmos. Res.*, 103, 106-118, doi:10.1016/j.atmosres.2011.04.003.
- J40. Jin, Y.-H., Kawamura, A., Park, S.-C., Amaguchi, H., Nakagawa, N., and J. Olsson (2011) Spatiotemporal classification of environmental monitoring data in the Yeongsan River basin, Korea, using self-organizing map, *J. Environ. Monit.*, 13, 2886-2894, doi:10.1039/c1em10132c.
- J41. Olsson, J., Gidhagen L., and A. Kawamura (2011), Downscaling of short-term precipitation time series for climate change impact assessment. Environmental Software Systems. Frameworks of eEnvironment - 9th IFIP WG 5.11 International Symposium, ISESS 2011, Brno, Czech Republic, June 27-29, doi: 10.1007/978-3-642-22285-6_67.
- J42. Olsson, J., Yang, W., Graham, L.P., Rosberg, J., and J. Andréasson (2011) Using an ensemble of climate projections for simulating recent and near-future hydrological change to Lake Vänern in Sweden, *Tellus*, 63A, 126-137, doi:10.1111/j.1600-0870.2010.00476.x.
- J43. Arheimer, B., Lindström, G., and J. Olsson (2011) A systematic review of sensitivities in the Swedish flood-forecasting system, *Atmos. Res.*, 100, 275-284, doi:10.1016/j.atmosres.2010.09.013.
- J44. Bruen, M., Krahe, P., Zappa, M., Olsson, J., Vehvilainen, B., Kok, K., and K. Daamen (2010) Visualizing flood forecasting uncertainty: some current European EPS platforms - COST731 working group 3, *Atmos. Sci. Lett.*, 11, 92-99, doi:10.1002/asl.258
- J45. Yang, W., Andréasson, J., Graham, L.P., Olsson, J., Rosberg, J., and F. Wetterhall (2010) Distribution-based scaling to improve usability of regional climate model projections for hydrological climate change impact studies, *Hydrol. Res.*, 41, 211-229, doi: 10.2166/nh.2010.004.
- J46. Olsson, J., Berggren, K., Olofsson, M., and M. Viklander (2009) Applying climate model precipitation scenarios for urban hydrological assessment: a case study in Kalmar City, Sweden, *Atmos. Res.*, 92, 364-375, doi:10.1016/j.atmosres.2009.01.015.
- J47. Graham, L.P., Olsson, J., Rosberg, J., Hellström, S.-S., Kjellström, E., and R. Berndtsson (2009) Simulating river flow to the Baltic Sea from climate simulations over the past millennium, *Boreal Env. Res.*, 14, 173-182.
- J48. Persson, M., and J. Olsson (2009) Scaling analyses of high-resolution dye tracer experiments, *Hydrol. Sci. J.*, 53, 1286-1299, doi: 10.1623/hysj.53.6.1286.
- J49. Olsson, J., and G. Lindström (2008) Evaluation and calibration of operational hydrological ensemble forecasts in Sweden, *J. Hydrol.*, 350, 14-24, doi:10.1016/j.jhydrol.2007.11.010.
- J50. Johnell, A., Lindström, G., and J. Olsson (2007) Deterministic evaluation of ensemble stream flow predictions in Sweden, *Nordic Hydrol.*, 38, 441-450, doi:10.2166/nh.2007.022.
- J51. Olsson, J., Persson, M., and K. Jinno (2007) Analysis and modeling of solute transport by breakdown coefficients and random cascades, *Water Resour. Res.*, 43, W03417, doi:10.1029/2005WR004631.
- J52. Nishiyama, K., Endo, S., Jinno, K., Uvo, C.B., Olsson, J., and R. Berndtsson (2007) Identification of typical synoptic patterns causing heavy rainfall in the rainy season in Japan by a Self-Organizing Map, *Atmos. Res.*, 83, 185-200, doi:10.1016/j.atmosres.2005.10.015.
- J53. Olsson, J. (2006) Spatio-temporal precipitation error propagation in runoff modelling: a case study in central Sweden, *Natural Hazards Earth System Sci.*, 6, 597-609, doi:10.5194/nhess-6-597-2006.
- J54. Andersson, L., Rosberg, J., Pers, B.C., Olsson, J., and B. Arheimer (2005) Estimating catchment nutrient flow with the HBV-NP model - sensitivity to input data, *Ambio*, 34, 521-532, doi:10.1579/0044-7447-34.7.521.
- J55. Persson, M., Haridy, S., Olsson, J., and J. Wendt (2005), Solute transport dynamics by high-resolution dye tracer experiments: image analysis and solute transport modeling, *Vadose Zone J.*, 4, 856-865, doi:10.2136/vzj2004.0129.

- J56. Bengtsson, L., Grahn, L., and J. Olsson (2005) Hydrological function of a thin extensive green roof in southern Sweden, *Nordic Hydrol.*, 36, 259-268.
- J57. Arheimer, B., Andersson, L., Larsson, M., Lindström, G., Olsson, J., and B.C. Pers (2004) Modelling diffuse nutrient flow in eutrophication control scenarios, *Water Sci. Tech.*, 49, 37-45.
- J58. Olsson, J., Uvo, C.B., Jinno, K., Kawamura, A., Nishiyama, K., Koreeda, N., Nakashima, T. and O. Morita (2004) Neural networks for rainfall forecasting by atmospheric downscaling, *J. Hydrol. Eng.*, 9, 1-12, doi: 10.1061/(ASCE)1084-0699(2004)9:1(1).
- J59. Sivakumar, B., Berndtsson, R., Olsson, J., and K. Jinno (2002) Reply to “Which chaos in the rainfall-runoff process?”, *Hydrol. Sci. J.*, 47, 149-158, doi: 10.1080/02626660209492914.
- J60. Olsson, J., Persson, M., Albergel, J., Berndtsson, R., Zante, P., Öhrström, P., and S. Nasri (2002) Multiscaling analysis and random cascade modeling of dye infiltration, *Water Resour. Res.*, 38, 1263, doi: 10.1029/2001WR000880.
- J61. Merabtene, T., Kawamura, A., Jinno, K., and J. Olsson (2002) Risk assessment for optimal drought management of an integrated water resources system using a genetic algorithm, *Hydrol. Proc.*, 16, 2189-2208.
- J62. Olsson, J., and P. Burlando (2002) Reproduction of temporal scaling by a rectangular pulses rainfall model, *Hydrol. Proc.*, 16, 611-630.
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- C59. Olsson, J., Arheimer, B., and L. Gidhagen (2011) Regional Climate Model projections for urban hydrological planning and adaptation: the SUDPLAN project, Proceedings of World Water Week: Water in an Urbanising World, 21-27 August, Stockholm, Sweden.
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- C61. Olsson, J., Dahné, J., Arheimer, B., Amaguchi, H., and A Kawamura (2011) Man vs. machine: a Swedish experiment on hydrological model performance assessment (invited talk), Proceedings of the XXV IUGG General Assembly, 28 June - 7 July, Melbourne, Australia.
- C62. Olsson, J., Gidhagen, L., and A. Kawamura (2011) Downscaling of short-term precipitation time series for climate change impact assessment, Proceedings of International Symposium on Environmental Software Systems, 27-29 June, Brno, Czech Republic.
- C63. Boda, H., Kawamura, A., Olsson, J., Amaguchi, H., Nakagawa, N., and B.D. Duong (2010) Spatio-temporal characteristics of 1-min rainfall in Tokyo, Proceedings of the 5th Conference of Asia Pacific Association of Hydrology and Water Resources, 8-9 November, Hanoi, Vietnam.

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- C69. Olsson, J., Yang, W., and U. Willén (2009) Application of RCM output for urban hydrological modeling, Proceedings of the 8th IAHS Scientific Assembly & 37th IAH Congress, 6-12 September, Hyderabad, India.
- C70. Berndtsson, R., Sivakumar, B., Olsson, J. and L.P. Graham (2009) Climate change and its effects on regional hydrology: a case study for the Baltic Sea drainage basin, Proceedings of the 18th World IMACS/MODSIM09 Congress, 13-17 July, Cairns, Australia.
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- C72. Olsson, J., Wetterhall, F., and U. Willén (2009) Estimation of point precipitation statistics from RCM output, EGU General Assembly, 19-24 April, Vienna, Austria, Geophys. Res. Abs., 11.
- C73. Edlund, C., and J. Olsson (2008) WebHypro – a real-time presentation system for hydrological forecasting, presented at COST731 End-user day, 23 October, Dublin, Ireland.
- C74. Olsson, J., Uvo, C.B., and E. Kjellström (2008) Downscaling of Regional Climate Model precipitation for urban hydrology, Proceedings of the 11th International Conference on Urban Drainage, 31 August - 5 September, Edinburgh, Scotland.
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- C78. Olsson, J., Uvo, C.B., and E. Kjellström (2008) Downscaling of ERA-40-driven Regional Climate Model precipitation, Proceedings of the 3rd WCRP International Conference on Reanalysis, 28 January - 1 February, Tokyo, Japan.
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- C82. Olsson, J., Lindström, G., Johnell, A., and K. Jacobsson (2006) Evaluation of operational hydrological ensemble forecasts in Sweden (invited talk), Proceedings of Joint COST Action 731 and NetFAM Workshop on Uncertainty in High-Resolution Meteorological and Hydrological Models, 26-28 April, Vilnius, Lithuania.

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- C110. Olsson, J., and J. Niemczynowicz (1993) A multifractal analysis of the spatial rainfall distribution associated with different weather types, Preprints of Hydrofractals '93 - Int. Conf. on Fractals in Hydroscience, 12-15 October, Ischia, Italy.
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- C115. Olsson, J., Niemczynowicz, J., Berndtsson, R., and M. Larson, (1990) Fractal properties of rainfall time series, European Geophysical Society XV General Assembly, 23-27 April, Copenhagen, Denmark, Annales Geophys., special issue, 142.

OTHER GREY REFERENCES (SEMINARS, POPULAR PRESENTATIONS ETC.)

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- O2. Olsson, J. (2020) Some reflections on climate knowledge transfer and the impact of climate model resolution, presentation held at the workshop Downscaling climate projections – towards better adaptation strategies in the Nordic countries, Nordic Council of Ministers, 20 November, online.

- O03. Olsson, J., J.C.M. Andersson P. Berg, J. Hansryd and B. Arheimer (2019) Operational rainfall monitoring by microwave links: a case study in Gothenburg, Sweden, *J. Hydrol. System*, 112, 15-17.
- O04. Olsson, J. (2017) New cloudburst statistics for Sweden, Slutseminarium for regeringsuppdrag om skyfall, 8 November, Norrköping, Sweden (in Swedish).
- O05. Olsson, J. (2017) 4DF: distance-dependent forecasts of hydrological cloudburst consequences, Meteorologisk Metodkonferens 2017, 26-27 October, Norrköping, Sweden (in Swedish).
- O06. Olsson, J. (2017) Multi-scale urban flood forecasting (MUFFIN): from local tailored systems to a Pan-European service, poster at Hydrologidagarna, 16-17 March, University of Gothenburg, Sweden.
- O07. Eronn, A., and J. Olsson (2016) Mission: cloudburst, invited talk at Research and Innovation for Sustainable Stormwater Management, 30 November-1 December, Stockholm, Sweden (in Swedish).
- O08. Olsson, J. (2016) Improved short-term forecasts of cloudbursts using radar and mobile masts, invited talk at Modelling for Climate Adaptation, 9 November, Lund, Sweden (in Swedish).
- O09. Olsson, J. (2016) Development of a high-resolution flood forecasting system in Sweden, invited talk at WMO RAVI Hydrological Forum 2016, 20 September, Oslo, Norway.
- O10. Olsson, J. (2015) Short-duration precipitation extremes – now and in the future, presentation at Sustainable Storm Water Management, 2-3 June, Stockholm, Sweden (in Swedish).
- O11. Tanouchi, H, Olsson, J., and A. Kawamura (2015) HYPE model parameter identification for urban watersheds based on infiltration characteristics and geographic information: a preliminary study, presented at Hydrologidagen, 31 March, Chalmers University of Technology, Gothenburg, Sweden (in Swedish).
- O12. Olsson, J. (2014) Intense precipitation and hydrological risk: towards high-resolution flood forecasts, invited talk at Forum för Naturkatastrofer, 18-19 November, Stockholm, Sweden (in Swedish).
- O13. Olsson, J., and K. Foster (2012) Spring flood forecasting in Sweden: new approaches and multi-modelling, presentation at European Centre for Medium-range Weather Forecasting (ECMWF) seminar, 17 April, Reading, UK.
- O14. Strömbäck, L., Olsson, J., and J. Andersson (2012) Hydrological climate services in SUDPLAN, presented at Hydrologidagarna, 14-15 March, Swedish Meteorological and Hydrological Institute, Norrköping, Sweden (in Swedish).
- O15. Berndtsson, R., Sivakumar, B., Olsson, J., and P. Graham (2012) Dynamic characteristics of temperature, precipitation and runoff to the Baltic Sea during the past millennium, *Vatten*, 67, 185-192.
- O16. Olsson, J. (2011) Hydrological climate change impacts studies and scientific theory, in K.M. Persson (Ed.), *Lars Bengtsson – a water resource*, Report nr. 3253, Department of Water Resources Engineering, Lund University, 181 pp.
- O17. Olsson, J. (2011) Climate adaptation: analyses of model results and development of tools, invited talk at Urban hydrology and storm water management, 9-10 November, Lund, Sweden (in Swedish).
- O18. Foster, K., Olsson, J., and C. B. Uvo (2011) New approaches to spring flood forecasting in Sweden, *Vatten*, 66, 193-198 (in Swedish).
- O19. Willems, P., Arnbjerg-Nielsen, K., Olsson, J., and V.T.V. Nguyen (2011) Impact of climate variability and change on rainfall extremes and urban drainage, Review report by the IWA/IAHR International Working Group on Urban Rainfall (IGUR), 94 pp.
- O20. Olsson, J., Dahné, J., German, J., Westergren, B., von Scherling, M., Kjellson, L., Ohls, F., and A. Olsson (2010) Impacts from future changes in climate and population on Stockholm main sewer system, *Mistra-SWECIA*, Newsletter nr. 2:10.
- O21. Olsson, J., and U. Willén (2010) Downscaling extreme RCA3-precipitation for urban hydrological applications, *Mistra-SWECIA Working Paper nr. 3*, 32 pp.
- O22. Olsson, J. (2010) Urban hydrological climate change impact assessment, invited talk at KlimatGIS-dagar, 18-19 May, Stockholm, Sweden (in Swedish).
- O23. Olsson, J., and C. B. Uvo (2010) Development of spring flood forecasts, invited talk at HUVA-dagen, 18 March, Stockholm, Sweden (in Swedish).
- O24. Olsson, J. (2010) Climate changes in Lake Mälaren, Course on Mälaren Region and Future Climate (Karlstad University), 28 January, Stockholm, Sweden (in Swedish).
- O25. Olsson, J. (2010) Spring flood forecasts, Nordic Course on Climate and Hydrology (Lund University), 25-27 January, Norrköping, Sweden.
- O26. Olsson, J. (2009) The return of the 10-year rainfall – now and in the future, invited talk at the 2009 Water Fairs, 22-24 September, Stockholm, Sweden (in Swedish).
- O27. Olsson, J. (2009) Estimation of local precipitation and IDF-curves from climate model data, invited talk at Water and Climate Changes – an International Perspective, 28 May, Tyréns AB, Stockholm, Sweden.

- O28. Smith, B., Lagergren, F., Olsson, J., and M. Rummukainen (2009) Integrated impact studies, Mistra-SWECIA Annual Report 2009, 21-22 (in Swedish).
- O29. Olsson, J. (2009) Hydrology and climate, invited talk at Nordic Hydrology, Fundamentals and Market Analysis, 21-23 April, Oslo, Norway.
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- O31. Olsson, J. (2009) Estimation of local precipitation and IDF-curves from climate model data, presented at Hydrologidagarna, 2-3 March, Chalmers University of Technology, Göteborg, Sweden (in Swedish).
- O32. Olsson, J., and K. Berggren (2008) How will local rainfall change in the future? Mistra-SWECIA, Newsletter nr. 1, 11-15.
- O33. Olsson, J. (2008) Focus on water in Stockholm – more water more frequently, or the opposite?, presented at the Mistra-SWECIA seminar Climate Change and Adaptation in the Stockholm Region, 28 November, Stockholm, Sweden (in Swedish).
- O34. Olsson, J. (2005) A test of MoST – a new tool for quality assurance of catchment-based modelling, *Vatten*, 61, 249-256 (in Swedish).
- O35. Graham, L.P., and J. Olsson,(2005) Validation of ELDAS at catchment scale, In: P. Viterbo (Ed.) Proceedings from ECMWF/ELDAS workshop on Land Surface Assimilation, Reading, UK, 8-11 November 2004, 179-186.
- O36. Vehviläinen, B., Cauwengerghs, M. K., Cheze, J.-L., Jurczyk, A., Moore, R. J., Olsson, J., Salek, M., and J. Szturc (2004), Evaluation of operational flow forecasting systems that use weather radar, Report to EU Concerted Research Action 717, 15 pp.
- O37. Johansson, B., and J. Olsson (2004) Application of radar precipitation for hydrological forecasting, invited talk at HUVA-dagen, 31 March, ELFORSK, Stockholm, Sweden (in Swedish).
- O38. Lindström, G., and J. Olsson (2004) Improved hydrological forecasting based on ensemble technique?, invited talk at HUVA-dagen, 31 March, ELFORSK, Stockholm, Sweden (in Swedish).
- O39. Olsson, J., Berndtsson, R., and J. Niemczynowicz,(2001) Fractal analysis and modeling of rainfall at department of Water Resources Engineering, Lund University, In: D. Gutknecht, M. Hantel and H.P. Nachtnebel (Eds.), *Scaling Problems in Hydrology*, National Committee of the International Hydrological Programme, Austrian Academy of Sciences, Vienna, 7-27.
- O40. Olsson, J. (1995) Is rainfall a cascade process with fractal properties?, *The Swedish Natural Science Research Council (NFR) Annual 1995*, Swedish Science Press, 23-32 (in Swedish).
- O41. Berndtsson, R., Jinno, K., Kawamura, A., Olsson, J., and S. Xu,(1994) Dynamical systems theory applied to long-term temperature and precipitation time series, In: J. Menon (Ed.), *Trends in Hydrology*, Council. Sci. Res. Integr., Trivandrum, India.
- O42. Olsson, J. (1993) Rainfall in Scania, presented at Hydrologidagarna, 9-10 March, Lund Institute of Technology, Lund University, Lund, Sweden (in Swedish).
- O43. Olsson, J. (1992) Deterministic chaos in precipitation, presented at Hydrologidagarna, 10-11 March, Royal Institute of Technology, Stockholm, Sweden (in Swedish).