

CURRICULUM VITAE – Knut Alfredsen

Name: Knut Tore Alfredsen
Born: 28.03.1965 in Ulsteinvik, Norway
Nationality: Norwegian
Present pos.: Professor
Department of Civil & Environmental Engineering, Faculty of Engineering Science, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

Degrees:

1988 Master of Science (Siv.ing.) in Civil Engineering, The Norwegian Institute of Technology, The University of Trondheim.
1999 Doctor of Engineering (Dr.ing.) in Civil and Environmental Engineering, The Norwegian University of Science and Technology.

Work experience:

1990 – 1992 Research Engineer, The Norwegian Institute of Technology.
Department of Hydraulic and Environmental Engineering,
1992 – 1994 Research Scientist, The Norwegian Hydrotechnical Laboratory
1994 – 1999 Doctoral student, Norwegian University of Science and Technology,
Department of Hydraulic and Environmental Engineering.
1999 – 2000 Research Scientist, SINTEF Civil and Environmental Engineering, Department of Water Resources
2001 Research Scientist, SINTEF Energy Research
2002 - 2010 Associate Professor, Dept. of Hydraulic and Environmental Engineering, Norwegian University of Science and Technology.
2010 – Professor, Dept. of Hydraulic and Environmental Engineering, Norwegian University of Science and Technology.
2002 – 2016 Scientific Advisor, SINTEF Energy Research
2002 – 2006 Leader, Hydraulic Engineering group at the department of hydraulic and environmental engineering.
2006 – 2009 Deputy head, Department of hydraulic and environmental engineering
2014 – 2017 Leader, PhD programme in hydraulic and environmental engineering.
2015 – 2016 Leader, Hydraulic Engineering group at the department of hydraulic and environmental engineering.

Membership in academic and professional committees

International Association of Hydraulic Research. Member of IAHR Ice Committee.
International Association of Hydrological Sciences
American Fisheries Society
American Geophysical Union
Norwegian Society of Chartered Engineers
The Committee on River Ice Processes and the Environment (CRIPE), International Member

Research

Centre for Environmental Design of Renewable Energy (CEDREN), member of management committee, project leader for Research Facilities and Tools sub-projects (2009-2017).
Co-leader WP2, Nordic Centre of Excellence, Cryosphere-atmosphere interactions in a changing Arctic climate (CRAICC) Bringing INnovation to onGOing water management (BINGO). Horizon2020.
KLIMA2050 – Centre for Research Innovation, Norwegian Research Council.
HydroCen – Work Package 4. Environmental Design.
INTPART – Hycanor, Norwegian Research Council.
HydroFlex – Increasing the value of Hydropower through increased Flexibility. Horizon2020
TryggElv – Identifisering og sikring av kritiske vassdrag. NFR.
Gemini-senter "Klimatilpasning i det bygde miljø" – member of leader group.

PhD research

Dr. Morten Stickler. Anchor ice formation and habitat choice of Atlantic salmon (*salmo salar* L.) parr in steep streams (2008).
Dr. Hans-Petter Fjeldstad. Migration of Atlantic salmon through barriers (2012).
Dr. Mulugeta Beredede Zelelew. Improving Runoff Estimation at Ungauged Catchments (2012).
Dr. Haregwoin Haile Chernet. Design Flood computation methods in the Presence long-term climate variability (2013).
Dr. Solomon Bogale Gebre. Climate change impacts on the winter regime of rivers and its effect on hydraulic structures (2014).
Dr. Roser Casas Mulet. Dynamics of dewatering and flooding during hydro peaking operations (2014).
Dr. Netra Prasad Timalisina. Ice problems in rivers with hydropowering power plants (2014).
Dr. Teklu Tesfaye Hailegeorgis. Improved distributed hourly runoff computation in hydrological models (2015).
Dr. Ashenafi Seifu Gragne. Updating Hydrologic Models for Improved Inflow Forecasts into Hydropower Reservoirs. (2015).
Dr. Yisak Sultan Abdella. Quantitative Estimation of Precipitation from Radar Measurements. (2016).
Dr. Tor Haakon Bakken. Water consumption in hydro power (2016).

Dr. Ana Adeva Bustos. A framework to determine environmental flows (2019).
 Dr. Marcell Szabo-Meszaros. Safe and efficient two-way migration for salmonids and European eel past hydropower structures (2019).
 Dr. Kuganesan Sivasubramaniam. Evaluation and improvement of quantitative precipitation estimates for use in hydrological applications. (2019)
 Dr. Aynalem Tassachew Tsegaw. Predicting flows in ungauged small rural catchments using hydrological modelling. (2019)
 Håkon Sundt. Environmental Design for Multiple Interests Under Future Flexible Hydropower Operation. (Planned defence 2021)
 Jo Halvard Halleraker Ecosystem based management - development of management tools and indicators for sustainable use of water and catchments. (planned defence 2022)
 Einar Albert Rødtang. Ice loads on bridges in steep rivers. (planned defence 2022)
 Ana Juarez. TryggElv (planned defence 2023)

Co-supervisor

Dr. D.P.Sangroula Sedimentation and sustainability of the Kulekhani reservoir. A Himalayan case. Main supervisor: H. Støle. (2006).
 Dr. P. Borsanyi A classification method for scaling river biotopes for assessing hydropower regulation impacts. Main supervisor: Å. Killingtveit. (2006).
 Dr. Ville Kasurinen, Linking water and carbon cycles: modeling latent heat exchange and dissolved organic carbon. University of Helsinki. Main supervisor: Frank Berninger (2016).
 Dr. Emmanuel Junju Climate change impacts on hydropower in east Africa. Main supervisor: Å. Killingtveit. (2016)
 Erle Kristvik "Climate change impacts on the water resources in Bergen". Main supervisor: Tone M. Muthanna.
 Elhadi Hassan Abdalla "Developing design tools for green stormwater infrastructures in cold climates." Main supervisor Tone M. Muthanna.
 Thea Ingeborg Skrede. "The implementation and design of safe floodways as stormwater management tools in a changing climate" Main supervisor Tone M. Muthanna.

MSc/Diploma theses

A total of 102 MSc/Diploma theses supervised since spring 2002.

Reviewer experience

Hydrology Research, Hydrological Processes, Journal of Hydrology, River Research and Applications, Ecohydrology, Ecology of Freshwater Fish, Canadian Journal of Fisheries and Aquatic Sciences, Journal of Hydrologic Engineering, Journal of Environmental Quality, Cold Regions Science and Technology, Water Science and Technology, Limnologica, Global and Planetary Change, Climatic Change, WIRES Water, JGR-Atmospheres, Energies, Limnology and Oceanography, Water Resources Research, Forest and Agriculture Meteorology, Ecological Engineering, Environmental Modelling and Software. Natural Hazards, Earth Surface Dynamics, Hydrology and Earth System Sciences. Journal of Ecohydraulics, Bio Science, Earth Surface Processes and Landforms, BioScience, Water, The Cryosphere, Journal of Cleaner Production. Review of book chapters. Research proposals: GEOIDE, NSERC, SNSF.

Exam committees

Discussion leader for licenciate degree for Jaan Kiviloog, Chalmers Technical University, Göteborg, Sweden (2005)
 PhD opponent for Simo Tammela, University of Oulu (2013)
 Member of PhD evaluation committee for Dmytro Siergiev, Luleå University of Technology (2014)
 External reviewer on PhD thesis of Ali Torabi Haghighi, University of Oulu (2014)
 Discussion leader for licenciate degree for Nicholas Zmijewskis, KTH (2014)
 Member of PhD evaluation committee for Andres Peralta-Tapia, SLU (2015)
 Member of PhD evaluation committee for Nicholas Zmijewskis, KTH (2017)
 External reviewer on PhD thesis of Justin Akanegbu, University of Oulu (2018)
 Member of PhD evaluation committee of S.M.Sayed Bin Asad, Luleå University of Technology (2019)
 1st opponent at PhD defence of Dereje Tesfahun Mengistu, University of Bergen (2019)
 2nd opponent at PhD defence of Xue Yang, University of Oslo (2020)
 Member of examination committee for David Faro, University of Trento (2020)
 External examiner at PhD defence of Bernhard Wegschneider, University of NewBrunswick (2020)

Review of applicants

Position of Assistant Professor in Hydropower, Kungliga Tekniska Högskolan, 2010
 External Reviewer for Tenure, University of Manitoba, 2013.
 External Reviewer for promotion at NVE, 2014
 Position of Assistant/Associate professor University of Oulu 2019

Other

Associate editor, Journal of Ecohydraulics.
 Guest editor of special issue of *Water*, 2020

Guest editor of special issue of *Hydrology Research*, 2020
 Guest editor of special issue “Hydropower and Sustainability” *Sustainability*, 2017
 25th International Symposium on ice 2020, leader of organizing committee
 Nordic Hydrological Conference 2018, leader of scientific committee
 International Symposium on Ecohydraulics 2014, member of organizing committee
 Northern Research Basins 2011, member of organizing committee

2013-14 Best paper award, Journal of Cold Regions Engineering, Gebre et al. (2014) Ice Effects on Hydropower Systems - A Review
 2019 Gerard Medal from the Committee of River Ice Processes and the Environment, with B. Turcotte, S. Beltaos and B. Burrell.

Selected academic and professional publications

Journals

- Tsegaw, AT, M. Pontoppidan, E. Kristvik, K. Alfredsen, and TM. Muthanna (2020) Hydrological impacts of climate change on small ungauged catchments-results from a GCM-RCM-hydrologic model chain. *Nat. Hazards Earth Syst. Sci. vol.20*.
- Hernes, R., Abdalla, EMH, Gagne, AS, Braskerud, BC, Alfredsen, K. and Muthanna, TM. (2020) Assessing the effects of four SUDS scenarios on Combined Sewer Overflows in Oslo, Norway: Evaluating the low-impact development module of the Mike Urban model. *Hydrology Research (Accepted)*
- Skrede, TI., Muthanna, TM., Alfredsen, K. (2020) Applicability of urban streets as temporary open floodways. *Hydrology Research (accepted)*
- Sivasubramaniam, K. Alfredsen, K., Rinde, T, Sæther, B. (2020) Can model-based data products replace gauge data as input to the hydrological model?. *Hydrology Research. vol. 51 (2)*.
- Engeland, Kolbjørn; Alfredsen, Knut. (2020) Hydrology and water resources management in a changing world. *Hydrology Research. vol. 51 (2)*.
- Barton, DN., Sundt, H., Adeva Bustos, A., Fjeldstad, H-P., Hedger, RD., Forseth, T., Kshler, B., Aas, Ø., Alfredsen, K., Madsen, AL. (2020) Multi-criteria decision analysis in Bayesian networks - diagnosing ecosystem service trade-offs in a hydropower regulated river. *Environmental Modelling & Software* 124. 104604
- Parasiewicz, P., Prus, P., Theodoropoulos, C., Alfredsen, K., Adamczyk, M., Comoglio, C., Vezza, P. (2019) Environmental Flows Determination and Monitoring with Hydraulic Habitat Models-Pushing the Boundaries of Habitat Models Application. *Water* 11(9) 1950
- Tsegaw, Aynalem Tassachew; Skaugen, Thomas; Alfredsen, Knut; Muthanna, Tone Merete. (2019) A dynamic river network method for the prediction of floods using a parsimonious rainfall-runoff model. *Hydrology Research vol.51(2)*
- Sivasubramaniam, K., Sharma, A., Alfredsen, K. (2019). Merging Radar and Gauge information within a Dynamical Model combination framework for precipitation estimation in cold climates. *Environmental Modelling and Software (accepted)*
- Szabo-Meszaros, M., Forseth, T., Baktoft, H., Fjeldstad, H-P., Silva, AT., Gjelland, KØ., Økland, F., Uglem, I., Alfredsen, K. (2019) Modelling mitigation measures for smolt migration at dammed river sections. *Ecohydrology (accepted)*
- Adeva Bustos, A., Hedger, RD., Fjeldstad, H-P., Stickler, M., Alfredsen, K. (2019) Identification of salmon population bottlenecks from low flows in a hydro-regulated river. *Environmental Modelling & Software vol 120*:
- Tsegaw, AT, Alfredsen, K., Skaugen, T., Muthanna, T.(2019). Predicting hourly flows at ungauged small rural catchments using a parsimonious hydrological model. *Journal of Hydrology, vol 573:855-871*
- Adeva Bustos, A., Alfredsen, K., Fjeldstad, H.-P., Ottoson, K. (2019). Ecohydraulic Modelling to Support Fish Habitat Restoration Measures. *Sustainability*, 11(5), 1500
- Adera, A.G., Alfredsen, K. (2019) Climate Change and Hydrological Analysis of Tekeze River Basin Ethiopia: Implication for potential hydropower production, *Journal of Water and Climate Change (accepted)*
- Juarez, A., Adeva Bustos, A., Alfredsen, K., Dønnum, BO. (2019) Performance of A Two-Dimensional Hydraulic Model for the Evaluation of Stranding Areas and Characterization of Rapid Fluctuations in Hydropeaking Rivers. *Water* 2019 ;Vol 11.
- Sivasubramaniam, K., Sharma, A., Alfredsen, K. (2018)Estimating radar precipitation in cold climates: the role of air temperature within a non-parametric framework. *Hydrology and Earth System Sciences. vol. 22*.
- Ashraf, Faisal; Haghghi, Ali Torabi; Riml, Joakim; Alfredsen, Knut; Koskela, Jarkko; Kløve, Bjørn; Marttila, Hannu. (2018) Changes in short term river flow regulation and hydropeaking in Nordic rivers. *Scientific Reports. vol. 8 (17232)*.
- Sundt-Hansen, L.E., Hedger, R.D. Ugedal, O., Diserud O.H., Finstad, A., Sauterleute J.F., Tøfte, L., Alfredsen, K., Forseth, T. (2018) MODELLING CLIMATE CHANGE EFFECTS ON ATLANTIC SALMON: IMPLICATIONS FOR MITIGATION IN REGULATED RIVERS. *Science of the Total Environment* vol 631-632
- Szabo-Meszaros, M., Navaratnam, C.U., Aberle, J., Silva, A. T.; Forseth, T., Calles, O., Fjeldstad, H-P., Alfredsen, K. (2018) Experimental hydraulics on fish-friendly trash-racks: an ecological approach. *Ecological Engineering: The Journal of Ecotechnology. vol. 113:11-20*
- Hailegeorgis, T.T., Alfredsen, K. (2018) High spatial-temporal resolution and integrated surface and subsurface Precipitation-Runoff modelling for a small stormwater catchment. *Journal of Hydrology. vol. 557:613-630*.
- Alfredsen, K., Haas, C., Tuthan, J., Zinke, P. (2018) Brief Communication: Mapping river ice using drones and structure from motion. *The Cryosphere. vol. 12:627-633*
- Kristvik, E., Muthanna, T., Alfredsen, K. (2018) Assessment of future water availability under climate change, considering scenarios for population growth and ageing infrastructure. *Journal of Water and Climate Change*.
- Heggenes, J., Alfredsen, K., Adeva Bustos, A., Huusko, A., Stickler, M. (2017) Be cool: A review of hydro-physical changes and fish responses in winter in hydropower-regulated northern streams. *Environmental Biology of Fishes*.
- Alfredsen, K. (2017) An Assessment of Ice Effects on Indices for Hydrological Alteration in Flow Regimes. *Water*, vol. 9.

- Casas-Mulet, R., Alfredsen, K., McCluskey, A., Stewardson, MJ. Key hydraulic drivers and patterns of fine sediment accumulation in gravel streambeds: a conceptual model and a case study from the Kiewa River, Australia. *Geomorphology (Accepted)*
- Heggenes, J., Alfredsen, K., Bustos, A.A., Huusko, A., Stickler, M. Be Cool: A review of hydro-physical changes and fish responses in winter in hydropower-regulated northern streams. *Environmental Biology of Fishes (Accepted)*
- Bakken, TH., Killingtveit, Å., Alfredsen, K. (2017) The Water Footprint of Hydropower Production - State of the Art and Methodological Challenges. *Global Challenges*. vol 1(5).
- Adeva Bustos, A. Hedger, RD, Fjeldstad, H-P, Alfredsen, K, Sundt, H, Barton, DN. (2017) Modeling the effects of alternative mitigation measures on Atlantic salmon production in a regulated river. *Water Resources and Economics (accepted)*.
- Hailgeorgis, TT, Alfredsen, K. (2017) Regional flood frequency analysis and prediction in ungauged basins including estimation of major uncertainties for mid-Norway. *Journal of Hydrology Regional Studies*. vol. 9.
- Hailgeorgis, TT, Alfredsen, K. (2017) Analyses of extreme precipitation and runoff events including uncertainties and reliability in design and management of urban water infrastructure. *Journal of Hydrology*. vol. 544.
- Lind, L, Alfredsen, K, Kuglerova, L, Nilsson, C. (2016) "Hydrological and thermal controls of ice formation in 25 boreal stream reaches". *Journal of Hydrology* vol 540.
- Bakken, T H, King, T, Alfredsen, K. (2016) "Simulation of river water temperatures during various hydro-peaking regimes." *Journal of Applied Water Engineering and Research* vol. 4(1)
- Kasurinen, Ville; Alfredsen, Knut; Ojala, A; Pumpanen, J; Weyhenmeyer, Gesa A; Futter, Martyn N.; Laudon, Hjalmar; Berninger, Frank. (2016) "Modeling nonlinear responses of DOC transport in boreal catchments in Sweden." *Water Resources Research* vol.52(7)
- Hailgeorgis, Teklu Tesfaye; Alfredsen, Knut; Abdella, Yisak Sultan; Kolberg, Sjur. (2016) "Evaluation of storage discharge relationships and recession analysis-based distributed hourly runoff simulation in large-scale, mountainous and snow- influenced catchment." *Hydrological Sciences Journal (in press)*.
- Bakken, Tor Haakon; Almestad, C; Rugelbak, JM; Escobar, M; Micko, S; Alfredsen, Knut. (2016) Climate Change and Increased Irrigation Demands: What Is Left for Hydropower Generation? Results from Two Semi-Arid Basins. *Energies*. vol. 9 (3)
- Weber, C., H. Scheuber, C. Nilsson and K. Alfredsen "Detection and apparent survival of PIT-tagged stream fish in winter" (2016) *Ecology and Evolution* vol 6(8)
- Hailgeorgis, T. and Alfredsen, K. "Regional Statistical And Precipitation-Runoff Modelling For Ecological Applications: Prediction Of Hourly Streamflow In Regulated Rivers And Ungauged Basins". *River Research and Applications (in press)*
- Hailgeorgis, T. and Alfredsen, K. "Multi-basin and regional calibration based identification of distributed Precipitation-Runoff models for hourly runoff simulation: Calibration and transfer of full and partial parameters". *Hydrology Research (in press)*
- Timalsina, NP. Beckers, F. and Alfredsen, K. (2016) "Modelling winter operational strategies of a hydropower system." *Cold Regions Science and Technology*. 122:1-9.
- Casas-Mulet, R., Alfredsen, K., Saltveit, SJ. and Brabrand, Å. (2016) "Hydropower operations in groundwater-influenced rivers: implications for Atlantic salmon (*Salmo salar*) early-life stages development and survival" *Fisheries Ecology and Management (in press)*
- Gragne, AS., Sharma, A., Mehrota, R. and Alfredsen, K. Recursively updating the error forecasting scheme of a complementary modelling framework for improved reservoir inflow forecasts. *Journal of Hydrology* 527
- Carolli, M., Vanzo, D., Zolezzi, G, Siviglia, A., Bruno, MC. and Alfredsen, K. A simple procedure for the assessment of hydropeaking flow alterations applied to several European streams. *Aquatic Sciences* 77(4)
- Bakken, TH., Johnsen, F., Killingtveit, Å. and Alfredsen, K. (2015) "Are Reservoirs Water Consumers or Water Collectors? Reflections on the Water Footprint Concept Applied on Reservoirs." *Water resources management*, 29(14):4919-4926
- Rial, NH and Alfredsen, K. (2015) "Environmental Flows in Nepal - An Evaluation of Current Practices and an Analysis of the Upper Trishuli-I Hydroelectric Project." *Hydro Nepal: Journal of Water, Energy and Environment*, 17:8-17.
- Timalsina, NP., Alfredsen, K. and Killingtveit, Å. "Impact of climate change on ice regime in a river regulated for hydropower" *Canadian Journal of Civil Engineering* 41: p 1-11.
- Hailgeorgis, T., Alfredsen, K., Abdella, YS. and Kolberg, S. "Evaluation of different parameterizations of the spatial heterogeneity of subsurface storage capacity for hourly runoff simulation in boreal mountainous watershed" *Journal of Hydrology*, 522:522-533, DOI:10.1016/j.jhydrol.2014.12.061
- Casas-Mulet, R. K. Alfredsen, Å. Brabrand and S.J. Saltveit (2015) "Survival of eggs of Atlantic salmon (*Salmo salar*) in a drawdown zone of a regulated river influenced by groundwater". *Hydrobiologia* 743(1):269-284
- Casas-Mulet, R, K. Alfredsen and Å. Killingtveit. (2014) "Modelling of environmental flow options for optimal Atlantic salmon (*Salmo salar*) embryo survival during hydropeaking". *Fisheries Management and Ecology* 21(6):480-490
- Hailgeorgis, T. and Alfredsen, K. "Comparative evaluation of performances of different conceptualizations of distributed HBV runoff response routines for prediction of hourly streamflow in boreal mountainous catchments" *Hydrology Research (accepted)*
- Gebre, SB, Boissy, T and Alfredsen, K. (2014) "Sensitivity of lake ice regimes to climate change in the Nordic Region" *The Cryosphere* 8:1589-1605
- Gebre, Solomon Bogale; Timalsina, Netra Prasad; Alfredsen, Knut. (2014) Some Aspects of Ice-Hydropower Interaction in a Changing Climate. *Energies* 7(3):1641-1655
- Casas-Mulet, R., Alfredsen, K. and Saltveit, SJ. "The survival of Atlantic salmon (*Salmo salar*) eggs during dewatering in a river subject to hydropeaking" *River Research and Applications (accepted)*
- Casas-Mulet, R., Alfredsen, K., Hamududu, BH., Timalsina, NP. The effects of hydropeaking on hyporheic interactions based on field experiments. *Hydrological Processes (accepted)*
- Kasurinen, VJ; Alfredsen, K; Kolari, Pasi; Mammarella, I; Alekseychik, P; Rinne, J; Vesala, Timo; Bernier, P; Boike, Julia; Langer, M; Marchesini, LB; van Huissteden, K; Dolman, Han; Sachs, T; Ohta, Tadashi; Varlagin, A; Rocha, Adrian V.; Arain, Altaf; Oechel, W; Lund, M.; Grelle, A; Linderoth, Andreas; Black, A; Aurela, M.; Laurila, T; Lohila, A; Berninger, F. (2014) Latent heat exchange in the boreal and arctic biomass. *Global Change Biology* 20(11):3439-3456
- Casas-Mulet, R., A. Escudero-Uribe, K. Alfredsen (2014) A cost-effective approach to predict dynamic variation of mesohabitats at the river scale in Norwegian systems. *International Journal of River Basin Management* 12(2):145-159

- Khanal, A. N.P. Timalisina, K. Alfredsen. Runoff forecasting and its application in reservoir operation and flood warning. *Hydro Nepal (accepted)*
- Shrestha, J., N.P. Timalisina, K. Alfredsen. (2014) Regional modelling for estimation of runoff from ungauged catchments, case study of the Saptakoshi basin, Nepal. *Hydro Nepal: Journal of Water, Energy and Environment (accepted)*
- Gebre, SB, Boissy, T and Alfredsen, K. (2014) Sensitivity to climate change of the thermal structure and ice cover regime of three hydropower reservoirs. *Journal of Hydrology* 501:208-227
- Casas-Mulet, R, Alfredsen, K, Boissy, T., Sundt, H. & Ruther, N. (2014) Performance of a one-dimensional hydraulic model for the calculation of stranding areas in hydropeaking rivers. *River Research and applications (accepted)*.
- Fjeldstad, H-P., Boissy, T. and Alfredsen, K. (2014) Optimizing Atlantic salmon smolt survival by use of hydropower simulation modelling in a regulated river. *Fisheries Management and Ecology*, 21(1):22-31
- Bakken, TH, Killingtveit, A, Engeland, K, Alfredsen, K, Harby, A. (2013) Water consumption from hydropower plants - review of published estimates and an assessment of the concept. *Hydrology and Earth System Sciences* 2013 ;17:3983-4000
- Zelewel, MB and Alfredsen, K. (2013) Hydrological model parameter transferability studies to estimate runoff at ungauged catchments. *Hydrological Sciences Journal* DOI:10.1080/02626667.2013.838003
- Timalisina, N.P.; Charmasson, J.; Alfredsen, K. Simulation of the ice regime in a Norwegian regulated river. (2013) *Cold Regions Science and Technology*, 94:61-73. DOI:10.1016/j.coldregions.2013.06.010
- Fjeldstad, H-P., Alfredsen, K. and Forseth, T. (2013) Atlantic salmon fishways: The Norwegian experiences. *Vann* 48(2), 191-205
- Hailegeorgis, T.T., Alfredsen, K and Thorolfsson, S.T. Regional Frequency Analysis of Extreme Precipitation with Consideration of Uncertainties to Update IDF Curves for the City of Trondheim. *Journal of Hydrology* DOI:10.1016/j.jhydrol.2013.06.019
- Chernet, H.H., Middtømme, G.H. and Alfredsen, K. Safety of Hydropower Dams in a Changing Climate. *Journal of Hydrologic Engineering* DOI:10.1061/(ASCE)HE.1943-5584.0000836
- Gebre, SB and Alfredsen, K. Contemporary trends and future changes in freshwater ice conditions: inference from temperature indices. *Hydrology Research* (accepted)
- Gebre, SB, Alfredsen, K, Lia, L, Stickler, M, Tesaker, E. Ice Effects on Hydropower Systems - A Review. *Journal of Cold Regions Engineering*, DOI:10.1061/(ASCE)CR.1943-5495.0000059
- Weber, C, C. Nilsson, C., L. Lind, KT Alfredsen, LE Polvi. Winter Disturbances and Riverine Fish: A Review. *BioScience* 63(3):199-210
- Tamrakar, B. and K. Alfredsen. Satellite-based precipitation estimation for hydropower development *Hydro Nepal: Journal of Water, Energy and Environment*, 12, 52-58.
- Zelewel, M.B. and Alfredsen, K. The use of co-kriging and map-correlation to study hydrological response patterns and select reference streamgauges for ungauged catchments *Journal of Hydrologic Engineering*, DOI:10.1061/(ASCE)HE.1943-5584.0000803
- Chernet, H.H., Alfredsen, K and Killingtveit, Å. The impacts of climate change on a Norwegian high-head hydropower system. *Journal of Water and Climate Change*, 4(1) pp. 17-37. doi:10.2166/wcc.2013.042
- Zelewel, M.B. and K. Alfredsen Sensitivity-guided evaluation of the HBV hydrological model parameterization. *Journal of Hydroinformatics* doi:10.2166/hydro.2012.011
- Dunbar, M, Alfredsen, K. and Harby, A. (2012) Hydraulic-habitat modelling for setting environmental river flow needs for salmonids. *Fisheries Management and Ecology*, 19(6) pp 500-517. DOI: 10.1111/j.1365-2400.2011.00825.x
- Fjeldstad, H-P; Barlaup, B; Stickler, M; Gabrielsen, S; Alfredsen, Knut. (2012) Removal of small dams and its influence on physical habitat for salmonids in a Norwegian river *River Research and Applications*, 28(6) pp 753-764. DOI: 10.1002/rra.1529
- Alfredsen, K., Harby, A, Linnansari, T and Ugedal, O. (2012) Development of an inflow controlled environmental flow regime for a Norwegian river. *River Research and Applications* 28(6) 731-739, DOI: 10.1002/rra.1550
- Prowse, T., K. Alfredsen, S. Beltaos, B. R. Bonsal, B. W., C. Duguay, A. Korhola, J. McNamara, W. Vincent, V. Vuglinsky and G. Weyhenmeyer (2011). Arctic freshwater ice and its climatic role. *Ambio* 40 (Suppl 1), pp 46-52 DOI: 10.1007/s13280-011-0214-9
- Prowse, T., K. Alfredsen, S. Beltaos, B. R. Bonsal, B. W., C. Duguay, A. Korhola, J. McNamara, W. Vincent, V. Vuglinsky and G. Weyhenmeyer (2011). Past and future changes in Arctic lake and river ice. *Ambio* 40 (Suppl 1) pp 53-62. DOI: 10.1007/s13280-011-0216-7.
- Prowse, T., K. Alfredsen, S. Beltaos, B. R. Bonsal, B. W. Bowden, C. Duguay, A. Korhola, J. McNamara, W. Vincent, V. Vuglinsky and G. Weyhenmeyer. (2011) Effects of changes in Arctic lake and river ice. *Ambio* 40(Suppl1) pp 63-74. DOI: 10.1007/s13280-011-0217-6.
- Shrestha, S and Alfredsen, K. (2011) Application of HBV Model in Hydrological Studies of Nepali River Basins: A Case Study *Hydro Nepal: Journal of Water, Energy and Environment*, 8, 38 - 44
- Abdella, Y.S. and Alfredsen, K A (2010) GIS toolset for automated processing and analysis of radar precipitation data *Computers and Geosciences*. 36(4) 422-429
- Abdella, Y.S. and Alfredsen, K (2010) Evaluation of precipitation estimates from Rissa radar in Norway *Hydrology Research*, 41, 171-192
- Stickler, M, Alfredsen, K, Linnansaari, T. Fjeldstad, HP. (2010) The influence of dynamic ice formation on hydraulic heterogeneity in steep streams. *River Research and Applications*, 26(9) 1187- 1197.
- Linnansaari, Tommi; Alfredsen, Knut; Stickler, Morten; Arnekleiv, Jo Vegar; Harby, Atle; Cunjak, R. Does ice matter? Site fidelity and movements by Atlantic salmon (*Salmo salar* L.) parr during winter in a substrate enhanced river reach (2009). *Rivers Research and Applications: an international journal devoted to river research and management* Volum 25(6), s. 773-787.
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