# LIST OF PUBLICATIONS JAN 10, 2022.


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## Articles in Review (1)

1. Leppä K., Tang Y., Ogee J., **Launiainen S.**, Khamen A., Kolari P., Sahlstedt E., Saurer M., Schiestl-Aalto P., Rinne-Garmston K., Explicitly accounting for needle sugar pool size crucial for predicting intra-seasonal dynamics of needle carbohydrates d18O and d13C. *New Phytologist* (submitted 02.12.21)

## A Peer-reviewed scientific articles (total 70)

1. **Launiainen S.**, Katul G., Leppä K., Kolari P., Aslan T., Grönholm T., Korhonen L., Mammarella I., Vesala T. 2021. Does growing atmospheric CO2 explain increasing carbon sink in a boreal coniferous forest? *Global Change Biol.* (accepted 4.1.2022)
2. Pang X., Gu X., **Launiainen S.**, Guan M. 2021. Urban hydrological responses to climate change and urbanization in cold climates. *Science of the Total Environment* (accepted 8.1.2022)
3. Tyystjärvi V., Kemppinen J., Luoto M., Aalto T., Markkanen T., **Launiainen S.**, Kieloaho A-J, Aalto J. 2021. Modelling spatio-temporal soil moisture dynamics in mountain tundra. *Hydrol. Proc.* 2022;36:e14450, https://doi.org/10.1002/hyp.14450
4. Aaltonen H., Tuukkanen T., Palviainen M., Laurén A., Tattari S., Piirainen S., Mattsson T., Ojala A., **Launiainen S.**, Finér L. 2021. Controls of organic carbon and nutrient export from pristine and managed boreal forested catchments. *Water*, 13(17), 2363; https://doi.org/10.3390/w13172363
5. Alekseychik P., Korrensalo A., Mammarella I., **Launiainen S.**, Tuittila E.-S., Korpela I., Vesala T. 2021. Carbon balance of a Finnish bog: temporal variability and limiting factors. *Biogeosciences* 18, 4681–4704, 2021 https://doi.org/10.5194/bg-18-4681-2021
6. Laurén A., Guan M., Salmivaara A., Leinonen A., Palviainen M., **Launiainen S.** 2021. NutSpaFHy - A Distributed Nutrient Balance Model To Predict Nutrient Export From Managed Boreal Headwater Catchments. Forests 2021, 12, 808. https://doi.org/10.3390/f12060808
7. Hökkä H., Laurén A., Stenberg L., **Launiainen S.**, Leppä K., Nieminen M. 2021. Defining guidelines for ditch depth in drained peatland forests. *Silva Fennica*, 55 (3), https://doi.org/10.14214/sf.10494
8. Deb Burman P. K., **Launiainen S.**, et al. 2021. Ecosystem-atmosphere carbon and water exchanges of subtropical evergreen and deciduous forests in India. *For. Ecol. Manag.,* https://doi.org/10.1016/j.foreco.2021.119371

9. Alekseychik, P., Katul, G. Korpela, I. and **Launiainen, S.**: Eddies in motion: visualizing boundary-layer turbulence above an open boreal peatland using UAS thermal videos. *Atmos. Meas. Tech.*, 14, 3501–3521, 2021; https://doi.org/10.5194/amt-14-3501-2021
10. Bhattacharjee J., Marttila H., **Launiainen S.**, Lepistö A., Kløve B. 2021. Combining Landsat image analysis, land-use statistics and land-use-specific export coefficient to predict river water quality after large scale peatland drainage. *Science of the Total Environment*, 779 146419, https://doi.org/10.1016/j.scitotenv.2021.146419
11. Lauren A., Palviainen M., **Launiainen S.**, Leppä K., Stenberg L., Urzainki I., Nieminen M., Laiho R., Hökkä H. 2021. Drainage and stand growth response in peatland forests. Description, testing, and application of mechanistic Peatland simulator SUSI. *Forests* 2021, 12, 293, https://doi.org/10.3390/f12030293
12. Leppä, K., Korkiakoski, M., Nieminen, M., Laiho, R., Hotanen, J.-P., Kieloaho, A.-J., Korpela, L., Laurila, T., Lohila, A., Minkkinen, K., Mäkipää, R., Ojanen, P., Pearson, M., Penttilä, T., Tuovinen, J.-P., and **Launiainen, S.** 2020. Vegetation controls of water and energy balance of a drained peatland forest: responses to alternative harvesting practices. *Agric. For. Meteorol.* https://doi.org/10.1016/j.agrformet.2020.108198
13. Leppä, K., Sarkkola, S., Peltoniemi, M., Hökkä, H., Saarinen, M., Lehtonen, A., Laiho, R., Mäkipää, R., **Launiainen, S.**, Nieminen, M. 2020. Selection cuttings as a tool to control water table level in boreal drained peatland forests. *Front. Earth Sci.*, 09 October 2020, https://doi.org/10.3389/feart.2020.576510
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15. Kozii, N., Haahti, K., Tor-ngern, P., Chi, J., Hasselquist, E. M., Laudon, H**., Launiainen, S.**, Oren, R., Peichl, M., Wallerman, J., and Hasselquist, N. J. 2020. Partitioning the forest water balance within a boreal catchment using sapflux, eddy covariance and process-based model, *Hydrol. Earth Syst. Sci.* 24, 2999–3014, 2020. https://doi.org/10.5194/hess-24-2999-2020
16. Ala-Ilomäki J., Salmivaara A., Siren M., **Launiainen S.**, Finer L., Heikkonen J., Uusitalo J. 2020. Assessing extraction trail trafficability by forest harvester CAN-bus data, *International Journal of Forest Engineering*, 31:2, 138-145, DOI: 10.1080/14942119.2020.1748958
17. Salmivaara, A., **Launiainen S.**, et al. 2020. Towards dynamic Forest Trafficability Prediction using Open Spatial Data, Hydrological Modelling and Sensor Technology, *Forestry* 2020; 1–13, doi:10.1093/forestry/cpaa010
18. **Launiainen S.**, Guan M., Salmivaara A., and Kieloaho A.-J. 2019. Modeling boreal forest evapotranspiration and water balance at stand and catchment scales: a spatial approach*, Hydrol. Earth Syst. Sci.*, 23, 3457–3480, https://doi.org/10.5194/hess-23-3457-2019, 2019.
19. Ruiz-Perez G., **Launiainen S.**, and Vico G. 2019. Role of plant traits on CO2 assimilation and thermal damage avoidance under warmer and drier climates in boreal forests, *Forests* 2019, 10, 398; doi:10.3390/f10050398
20. Tupek B., **Launiainen S.**, Peltoniemi M., Sievänen R., Perttunen J., Kulmala L., Penttilä T., Hashimoto S. and Lehtonen A. 2019. Evaluating CENTURY, Yasso07, and Yasso15 soil carbon models against boreal forest soil CO2 emissions and organic carbon stocks. *European Journal of Soil Science*, 1–12. https://doi.org/10.1111/ejss.12805
21. Siren M., Salmivaara A., Ala-Ilomaki J., **Launiainen S.**, Lindeman H., Uusitalo J., Sutinen R. and Hänninen P. 2018. Predictive factors for forwarding rut formation on fine-grained soils*. Scandinavian Journal of Forest Research*, 34:2, 145-154, DOI: 10.1080/02827581.2018.1562567
22. Stenberg L., Haahti K., Hökkä H., **Launiainen S.**, Nieminen M., Laurén A. and Koivusalo H. 2018. Hydrology of drained peatland forest: numerical experiment on the role of tree stand heterogeneity and management. *Forests* 2018, 9, 645; doi:10.3390/f9100645
23. Park H., **Launiainen S.**, Konstantinov P., Iijima Y. and Fedorov A.N. 2018. Modeling moss affected soil temperature and carbon fluxes at a tundra site of northeastern Siberia. *Journal of Geophysical Research – Biogeosciences*, 123(9), 3028-3044

24. Katul G., Peltola O., Grönholm T., **Launiainen S**., Mammarella I. and Vesala T. 2018. Ejective and sweeping motions above a peatland ant their role in relaxed eddy accumulation measurements and turbulent transport modeling. *Boundary Layer Meteorology*, https://doi.org/10.1007/s10546-018-0372-4.
25. Lappalainen M., Palviainen M., Kukkonen J., Setälä H., Piirainen D., Sarjala T., Koivusalo H., Finér L., **Launiainen S.**, Laurén A. 2018. Release of carbon in different molecule size fractions from decomposing boreal mor and peat as affected by Enchytraeid worms. *Water, Air and Soil Pollution* 229: 240. https://doi.org/10.1007/s11270-018-3871-5
26. Nieminen M., Hökkä H., Laiho R., Juutinen A., Ahtikoski A., Pearson M., Kojola S., Sarkkola S., **Launiainen S.**, Valkonen S., Penttilä T., Lohila A., Saarinen M., Haahti K., Mäkipää R., Miettinen J. and Ollikainen M. 2018. Could continuous cover forestry be an economically and environmentally feasible management option on drained boreal peatlands? *Forest Ecology and Management* 424, 78-84.
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28. Nevalainen, P., Salmivaara, A., Ala-Ilomäki, J., **Launiainen, S.**, Hiedanpää, J., Finér, L., Pahikkala, T., Heikkonen, J. 2017. Estimating the Rut Depth by UAV Photogrammetry. *Remote Sensing* 9 12: 1279-1304.
29. Kieloaho, A.-J., Pihlatie, M., **Launiainen, S**., Kulmala, M., Riekkola, M.-L., Parshintsev, J., Mammarella, I., Vesala, T., and Heinonsalo, J. 2017. Soil concentrations and soil-atmosphere exchange of alkylamines in a boreal Scots pine forest, *Biogeosciences*, 14(5), 1075-1091.
30. **Launiainen, S.**, Katul, G.G., Kolari, P., Lindroth, A., Lohila, A., Aurela, M., Varlagin, A., Grelle A., and Vesala, T. 2016. Do the energy fluxes and surface conductance of boreal coniferous forests in Europe scale with leaf area? *Global Change Biology*, doi: 10.1111/gcb.13497
31. Minunno, F., Peltoniemi, M., **Launiainen, S.**, Aurela, M., Lindroth, A., Lohila, A., Mammarella, I., Minkkinen, K., and Mäkelä, A. 2016. Calibration and validation of a semi-empirical flux ecosystem model for coniferous forests in the Boreal region. *Ecological Modelling*, 341, 37–52.
32. Hökkä, H., Salminen, H., Ahtikoski, A., Kojola, S., **Launiainen, S**. and Lehtonen, M. 2016. Long-term impact of ditch network maintenance on timber production, profitability and environmental loads at regional level - a simulation study. *Forestry,* 90(2), 234–246.
33. Chen, Y., Ryder, Y., Bastriko, V., McGrath, M.J, Naudts, K., Otto, J., Ottlé, C., Peylin, P., Polcher, J., Valade, A., Black, A., Elbers, J.A., Moors, E., Foken, T., van Gorsel, E., Haverd, V., Heinesch, B., Tiedemann, F., Knohl, A., **Launiainen, S.**, Loustau, D., Ogée, J., Vesala, T., Luyssaert, S. 2016. Evaluating the performance of the land surface model ORCHIDEE-CAN (revision 2754) on water and energy fluxes estimation with a single- and an implicit multi-layer energy budget scheme. *Geosci. Model Dev.*, 9, 2951–2972, 2016, www.geosci-model-dev.net/9/2951/2016/ doi:10.5194/gmd-9-2951-2016
34. Palviainen, M., Laurén, A., **Launiainen, S.** and Piirainen, S. 2016. Predicting the export and concentrations of organic carbon, nitrogen and phosphorus in boreal lakes by catchment characteristics and land use: a practical approach. *Ambio* (2016), doi:10.1007/s13280-016-0789-2
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36. **Launiainen, S**., Katul, G.G., Kolari, P., and Lauren, A. 2015. Coupling boreal forest CO2, H2O and energy flows by a vertically structured forest canopy – soil model with separate bryophyte layer, *Ecol. Mod.*, 312, 385–405, doi:10.1016/j.ecolmodel.2015.06.007.
37. Palviainen M., Finér L., Laurén A., **Launiainen S.**, Piirainen S., Mattsson T. and Starr M. 2014. Nitrogen, phosphorus, carbon and suspended solids loads from forest clearcutting and site preparation: long-term paired catchment studies from Eastern Finland. *Ambio*, 43(2), 218-233, 2014

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39. **Launiainen S.**, Futter M., Ellison D., Clarke N., Finér L., Högbom L., Lauren A. and Ring E. 2013. Is the Water Footprint an appropriate tool for forestry and forest products – the Fennoscandian case. *Ambio*, 10.1007/s13280-013-0380-z, 2013.
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42. **Launiainen S.**, Katul, G.G., Grönholm T. and Vesala T. 2013. Partitioning of ozone fluxes between canopy and forest floor by measurements and a multi-layer model. *Agricultural and Forest Meteorology*, 173, 85 – 99, 2013.
43. Alekseychik P., Mammarella I., **Launiainen S.**, Rannik Ü. and Vesala T. 2013. Evolution of the nocturnal decoupled layer in the pine forest canopy. *Agricultural and Forest Meteorology*, 174–175: 15–27, 2013.
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45. Petäjä T., Laakso L., Grönholm T., **Launiainen S.**, Evele-Peltoniemi I., Virkkula A., Backman J., Manninen H.E., Sipilä M., Haapanala S., Hämeri K., Vanhala E., Tuomi T., Paatero J., Aurela M., Hakola H., Makkonen U., Hellén H., Hillamo R., Vira J., Prank M., Sofiev M., Siitari-Kauppi M., Laaksonen A., Lehtinen K.E.J., Kulmala M., Viisanen Y. and Kerminen V.M. 2011. In-situ observations of Eyjafjallajökull ash particles by hot air balloon. *Atmospheric Environment*, 48, 104 – 112, 2012.
46. **Launiainen S.,** Katul G.G., Kolari P., Vesala T. and Hari P. 2011. Empirical and optimal stomatal controls on leaf and ecosystem level CO2 and H2O exchange rates. *Agricultural and Forest Meteorology*, 151: 1672-1689, 2011.
47. Huang C.-W., **Launiainen S.**, Grönholm T. and Katul G.G. 2014. Particle deposition to forests: An alternative to K-theory. Atmospheric Environment, 94, 593 – 605, 2014.
48. Katul G.G., Grönholm T., **Launiainen S**. and Vesala T. 2011. The effects of the canopy medium on dry deposition velocities of aerosol particles in the canopy sub-layer above forested ecosystems. *Atmospheric Environment*, 45 (5): 1203-1212, 2011.
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59. Grönholm T., Haapanala S.**, Launiainen S**., Rinne J., Vesala T. and Rannik Ü. 2007. The dependence of the beta coefficient of REA system with dynamic deadband on atmospheric conditions, *Environmental Pollution*, 152 (3): 597-603, 2009.
60. Kulmala L., **Launiainen S**., Pumpanen J., Lankreijer H., Lindroth A., Hari P. and Vesala T. 2008. $H_2O$ and $CO_2$ fluxes at the floor of a boreal pine forest, *Tellus*, 60B (2): 167-178, 2008.
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62. Lagergren F., Lindroth A., Dellwik E., Ibrom A., Lankreijer H., **Launiainen S**., Mölder M., Kolari P., Pilegaard K. and Vesala T. 2008. Biophysical controls on $CO_2$ fluxes of three Northern forests based on long-term eddy covariance data, *Tellus*, 60B (2), 143-152, 2008.
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## B Non-refereed scientific articles

1. **Launiainen, S.**, Lehtonen, A., and Laurén, A. 2015. Boreaalisten metsien hiilivirrat ja varastot, in Salo, K. (ed.): *Metsä – Monikäyttö ja ekosysteemipalvelut*, pp. 305 – 309. Luonnonvarakeskus, Helsinki, 2015. 328 p., http://urn.fi/URN:ISBN:978-952-326-123-5
2. Rannik Ü., **Launiainen S.**, Pumpanen J., et al. 2013. Environmental factors, in Hari P., Heliövaara K. and Kulmala L. (eds.): *Physical and Physiological Forest Ecology*, pp. 27 – 42. Springer, Dordrecht, 2013. 534 p.
3. Hölttä T., Hari P., Heliövaara K., Nikinmaa E., Pumpanen J., Vesala T., Kolari P., **Launiainen S.**, et al. 2013. Fluxes of Carbon, Water and Nutrients , in Hari P., Heliövaara K. and Kulmala L. (eds.): *Physical and Physiological Forest Ecology*, pp. 225 – 328. Springer, Dordrecht, 2013. 534 p.
4. Rannik Ü., Kolari P. and **Launiainen S**. 2008. Environmental factors in the canopy, in Hari P. and Kulmala L. (eds.): "Boreal forest and climate change", *Advances in Global Change Research*, Vol. 34, pp. 298-306, Springer, Dordrecht, 2008.

## D Publications intended for professional communities

1. Nieminen, M., **Launiainen, S.**, Sarkkola, S. and Laurén, A. 2020. Metsätalouden vesistökuormitus: nykykäsitys ja tulevaisuuden menetelmäkehitys. Metsätieteen aikakauskirja 2020-10336. Katsaus. 9 s. https://doi.org/10.14214/ma.10336
2. Laurén, A., Hökkä, H., Urzainki, I., Palviainen, M., Haahti, K., Stenberg, L**., Launiainen, S.**, Nieminen, M., and Leinonen, A. 2020. Vesiensuojelua tiedon avulla – suosimulaattori kertoo, missä kunnostusojitusta ei kannata tehdä. *Vesitalous* 2/2020: 25 – 27.
3. Finér, L., Tattari, S., **Launiainen, S.**, Laurén, A., Linjama, J., Mattsson, T. ja Piirainen, S. 2015. Ajantasaista tietoa metsätalouden vesistökuormituksesta. *Vesitalous* 1/2016.
4. **Launiainen, S.**, Sarkkola, S., Laurén, A., Puustinen, M., Tattari, S., Mattsson, T., Piirainen, S., Heinonen, J., Alakukku, L. ja Finér, L. 2015. KUSTAA-työkalu valuma-alueen vesistökuormituksen laskentaan. Suomen Ympäristökeskuksen Raportteja 33, 55p., ISBN 978-952-11-4374-8 (PDF)
5. **Launiainen S.**, Laurén A., Jaakkola E., Tattari S., Saarelainen J., Kauppila M., Joensuu S., Piirainen S. and Finér L. 2012. Maatalouden ja metsätalouden kuormituksen erottaminen Savijoen valuma-alueella. *Vesitalous* 4/ 2012: 15 – 21.

## E Publications intended for the general public

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