

LIST OF PUBLICATIONS

Peer-reviewed publications:

Bengtsson, L., Magnusson, L., Källén, E., 2008: Independent Estimations of the Asymptotic Variability in an Ensemble Forecast System. *Monthly Weather Review*, Volume 136, Issue 11 pp. 4105-4112.

Bengtsson, L., Körnich, H., Källén, E., Svensson, G., 2011: Large-Scale Dynamical Response to Subgrid-Scale Organization Provided by Cellular Automata. *Journal of the Atmospheric Sciences* Volume 68, Issue 12 pp. 3132-3144.

Bengtsson, L., Tijm, S., Váňa, F., Svensson, G., 2012: Impact of flow-dependent horizontal diffusion on resolved convection in AROME. *Journal of Applied Meteorology and Climatology* Volume 51, No.1, pp 54-67.

Bengtsson, L., M. Steinheimer, P. Bechtold, and J.-F. Geleyn, 2013: A stochastic parameterization for deep convection using cellular automata, *Quarterly Journal of the Royal Meteorological Society*, 139 (675) .

Bengtsson, L., Körnich, H., 2016: Impact of a stochastic parameterization of cumulus convection, using cellular automata, in a meso-scale ensemble prediction system. *Quarterly Journal of the Royal Meteorological Society. Q.J.R. Meteorol. Soc.*, 142: 1150–1159. doi: 10.1002/qj.2720

Berner, J., U. Achatz, L. Batté, **L. Bengtsson**, A.d. Cámara, H.M. Christensen, M. Colangeli, D.R. Coleman, D. Crommelin, S.I. Dolaptchiev, C.L. Franzke, P. Friederichs, P. Imkeller, H. Järvinen, S. Juricke, V. Kitsios, F. Lott, V. Lucarini, S. Mahajan, T.N. Palmer, C. Penland, M. Sakradzija, J. von Storch, A. Weisheimer, M. Weniger, P.D. Williams, and J. Yano, 2017: [Stochastic Parameterization: Toward a New View of Weather and Climate Models](https://doi.org/10.1175/BAMS-D-15-00268.1). *Bull. Amer. Meteor. Soc.*, 98, 565–588, <https://doi.org/10.1175/BAMS-D-15-00268.1>

Olsson, J., Pers, C., **Bengtsson, L.**, Pechlivanidis, I., Berg, P., Körnich, H., 2017: Distance-dependent depth-duration analysis in high-resolution hydro-meteorological ensemble forecasting: A case study in Malmö City, Sweden. *Environmental Modelling & Software*, Volume 93, 2017, Pages 381-397, ISSN 1364-8152.

Bengtsson, L., U. Andrae, T. Aspelien, Y. Batrak, J. Calvo, W. de Rooy, E. Gleeson, B. Hansen-Sass, M. Homleid, M. Hortal, K. Ivarsson, G. Lenderink, S. Niemelä, K.P. Nielsen, J.

Onvlee, L. Rontu, P. Samuelsson, D.S. Muñoz, A. Subias, S. Tijm, V. Toll, X. Yang, and M.Ø. Køltzow, 2017: [The HARMONIE–AROME Model Configuration in the ALADIN–HIRLAM NWP System](https://doi.org/10.1175/MWR-D-16-0417.1). *Mon. Wea. Rev.*, 145, 1919–1935, <https://doi.org/10.1175/MWR-D-16-0417.1>

Yano, J., M.Z. Ziemiański, M. Cullen, P. Termonia, J. Onvlee, **L. Bengtsson**, A. Carrassi, R. Davy, A. Deluca, S.L. Gray, V. Homar, M. Köhler, S. Krichak, S. Michaelides, V.T. Phillips, P.M. Soares, and A.A. Wyszogrodzki, 2018: [Scientific Challenges of Convective-Scale Numerical Weather Prediction](https://doi.org/10.1175/BAMS-D-17-0125.1). *Bull. Amer. Meteor. Soc.*, 99, 699–710, <https://doi.org/10.1175/BAMS-D-17-0125.1>

Bengtsson, L., J. Bao, P. Pegion, C. Penland, S. Michelson, and J. Whitaker, 2019: [A Model Framework for Stochastic Representation of Uncertainties Associated with Physical Processes in NOAA’s Next Generation Global Prediction System \(NGGPS\)](https://doi.org/10.1175/MWR-D-18-0238.1). *Mon. Wea. Rev.*, 147, 893–911, <https://doi.org/10.1175/MWR-D-18-0238.1>

Bengtsson, L., J. Dias, M. Gehne, P. Bechtold, J. Whitaker, J. Bao, L. Magnusson, S. Michelson, P. Pegion, S. Tulich, and G.N. Kiladis, 2019: [Convectively Coupled Equatorial Wave Simulations Using the ECMWF IFS and the NOAA GFS Cumulus Convection Schemes in the NOAA GFS Model](https://doi.org/10.1175/MWR-D-19-0195.1). *Mon. Wea. Rev.*, 147, 4005–4025, <https://doi.org/10.1175/MWR-D-19-0195.1>

Björg Jenny Kokkvoll Engdahl, Gregory Thompson & **Lisa Bengtsson** (2020) Improving the representation of supercooled liquid water in the HARMONIE-AROME weather forecast model, *Tellus A: Dynamic Meteorology and Oceanography*, 72:1, 1-18, DOI: [10.1080/16000870.2019.1697603](https://doi.org/10.1080/16000870.2019.1697603)

Björg Jenny Kokkvoll Engdahl, Bjørn Egil Kringlebotn Nygaard, Vemund Losnedal, Gregory Thompson, **Lisa Bengtsson** (2020): Effects of the ICE-T microphysics scheme in HARMONIE-AROME on estimated ice loads on transmission lines, *Cold Regions Science and Technology*, Volume 179, <https://doi.org/10.1016/j.coldregions.2020.103139>.

Bengtsson, L., Dias, J., Tulich, S., Gehne, M., & Bao, J.-W. (2021). A stochastic parameterization of organized tropical convection using cellular automata for global forecasts in NOAA's Unified Forecast System. *Journal of Advances in Modeling Earth Systems*, 13, e2020MS002260. <https://doi.org/10.1029/2020MS002260>

Stefanova, Lydia; Meixner, Jessica; Wang, Jiande; Ray, Sulagna; Mehra, Avichal; Barlage, Michael; **Bengtsson, Lisa**; Bhattacharjee, Partha S.; Bleck, Rainer; Chawla, Arun ;Green, Benjamin W.; Han, Jongil; Li, Wei; Li, Xu; Montuoro, Raffaele; Moorthi, Shrinivas; Stan,

Cristiana; Sun, Shan; Worthen, Denise; Yang, Fanglin; Zheng, Weizhong; (2022). Description and Results from UFS Coupled Prototypes for Future Global, Ensemble and Seasonal Forecasts at NCEP. *Office note (National Centers for Environmental Prediction (U.S.))* ; 510 DOI : <https://doi.org/10.25923/knxm-kz26>

Bengtsson, L., Gerard, L., Han, J., Gehne, M., Li, W., & Dias, J. (2023). A Prognostic-Stochastic and Scale-Adaptive Cumulus Convection Closure for Improved Tropical Variability and Convective Gray-Zone Representation in NOAA's Unified Forecast System (UFS), *Monthly Weather Review*, 150(12), 3211-3227.

Bernardet, L., **L. Bengtsson**, A. Reinecke, F. Yang, M. Zhang, K. Hall, et al. (August 2024): Common Community Physics Package: Fostering Collaborative Development in Physical Parameterizations and Suites. *Bull. Amer. Meteor. Soc.*, E1490–E1505, <https://doi.org/https://doi.org/10.1175/BAMS-D-23-0227.1>.

Bengtsson, L., and J. Han, 2024: Updates to NOAA's Unified Forecast System's cumulus convection parameterization scheme between GFSv16 and GFSv17. *Wea. Forecasting*, <https://doi.org/10.1175/WAF-D-23-0232.1>, in press.

Survey papers, books, chapters in books:

Bengtsson, L., 2012: On the convective scale predictability of the atmosphere. PhD thesis, Stockholm University, Sweden. ISBN 978-91-7447-494-7. Department of Meteorology, Stockholm University.

R. S. Plant, **L. Bengtsson** and M. A. Whittall. Stochastic aspects of convective parameterization. In R. S. Plant and J.-I. Yano, editors, *Parameterization of Atmospheric Convection. Volume 2: Current Issues and New Theories*, chapter 20, pages 135-172. Imperial College Press, 2015.

J.-I. Yano, **L. Bengtsson**, J-F. Geleyn, and R, Brozkova. Towards a unified and self-consistent parameterization framework. In R. S. Plant and J.-I. Yano, editors, *Parameterization of Atmospheric Convection. Volume 2: Current Issues and New Theories*, chapter 6. Imperial College Press, 2015.

Peer-reviewed conference proceeding:

Bengtsson, L., 2011: A stochastic parameterization of deep convection organization using cellular automata. ECMWF Workshop Proceedings on Representing Model Uncertainty and Error in Numerical Weather and Climate Prediction Models. Pages 263–269.

Björg Jenny Kokkvoll Engdahl, Bjørn E.K. Nygaard, Gregory Thompson and **Lisa Bengtsson** (2019). Improved predictions of atmospheric icing at METNorway. Proceedings – Int. Workshop on Atmospheric Icing of Structures. https://iwais2019.is/images/Papers/059_iwais_cp_BJKE.pdf