

Peer-Reviewed Publications (as of Jun 2024)

- Ahmad, S, Kumar, S, Draper, C, and R. Reichle (submitted), Pitfalls in the promise of the differentiable modeling paradigm for unifying process and machine learning models in geosciences, *Geophysical Research Letters*.
- Stanley Z, Draper C, Frolov S, Slivinski L, Huang W, and Winterbottom, H (2024). Vertical localization for strongly coupled data assimilation: experiments in a global coupled atmosphere-ocean model, *Journal of Advances in Modeling Earth Systems*, 16, e2023MS003783.
- Frolov and Coauthors (2024): Local volume solvers for Earth system data assimilation: implementation in the framework for Joint Effort for Data Assimilation, *Journal of Advances in Modeling Earth Systems*, 16, e2023MS003692.
- Gichamo, T, and Draper, C (2022). An Optimal Interpolation–Based Snow Data Assimilation for NOAA’s Unified Forecast System (UFS). *Wea. Forecasting*, 37, 2209–2221.
- Kumar and Coauthors, (2022). An agenda for land data assimilation priorities: Realizing the promise of terrestrial water, energy, and vegetation observations from space, *Journal of Advances in Modeling Earth Systems*, 14, e2022MS003259.
- Frolov, S, Whitaker, J & Draper, C (2022). Including parameterized error covariance in local ensemble solvers: Experiments in a 1D model with balance constraints. *Quarterly Journal of the Royal Meteorological Society*, 148, 2086– 2101.
- Reichle R, Zhang S, Liu Q, Draper C, Kolassa J, Todling R (2021). Assimilation of SMAP Brightness Temperature Observations in the GEOS Land-Atmosphere Data Assimilation System. *IEEE J Sel. Top. Appl. Earth Obs. Remote Sens.*, 14, 10628-10643.
- Draper, C. (2021). Accounting for Land Model Uncertainty in Numerical Weather Prediction Ensemble Systems: Toward Ensemble-Based Coupled Land–Atmosphere Data Assimilation, *Journal of Hydrometeorology*, 22, 2089–2104.
- Gruber, A and Coauthors (2020), Validation practices for satellite soil moisture retrievals: What are (the) errors?, *Remote Sensing of Environment*, 244.
- Hurwitz, M., and Coauthors (2020), Six Priorities for Investment in Snow Research and Product Development. *Bulletin of the American Meteorological Society*, 101, E2025–E2029.
- Albergel, C.,Y. Zheng, B. Bonan, E. Dutra, N. Rodríguez-Fernández, S. Munier, C. Draper, P. de Rosnay, J. Muñoz-Sabater, G. Balsamo, D. Fairbairn, C. Meurey, J-C. Calvet (2020), Data assimilation for continuous global assessment of severe conditions over terrestrial surfaces, *Hydrology and Earth System Sciences*, 24.
- Hagan, D., R. Parinussa, G. Wang, and C. Draper (2020), An Evaluation of Soil Moisture Anomalies from Global Model-Based Datasets over the People’s Republic of China. *Water* 2020, 12 (117).
- Draper, C. and R. Reichle (2019), Assimilation of satellite soil moisture for improved atmospheric reanalyses, *Monthly Weather Review* 147 (6), 2163-2188.

- Albergel, C., S. Munier, A. Bocher, B. Bonan, Y. Zheng, C. Draper, D. Leroux, and J.-C. Calvet (2018), LDAS-Monde sequential assimilation of satellite derived observations applied to the contiguous US: An ERA-5 driven reanalysis of the land surface variables, *Remote Sensing*, 10 (10), 1627.
- Hacker, J., C. Draper, and L. Madaus (2018), Challenges and Opportunities for Data Assimilation in Mountainous Environments, *Atmosphere*, 9, 127.
- Draper, C., R. Reichle, and R. Koster (2017), Assessment of MERRA-2 Land Surface Energy Flux Estimates, *Journal of Climate*, 31, 671–691.
- Giroto, M., G. De Lannoy, R. Reichle, M. Rodell, C. Draper, S. Bhanja, A. Mukherjee (2017), Benefits and Pitfalls of GRACE Data Assimilation: a Case Study of Terrestrial Water Storage Depletion in India, *Geophysical Research Letters*, 44: 4107-4115.
- Gelaro, R. and Coauthors (2017), The Modern-Era Retrospective Analysis for Research and Applications, Version 2 (MERRA-2), *Journal of Climate*, 30.
- Reichle, R., C. Draper, Q. Liu, M. Giroto, S. Mahanama, R. Koster, and G. De Lannoy (2016), Assessment of MERRA-2 land surface hydrology estimates, *Journal of Climate*, 30, 2937–2960.
- Reichle, R., Q. Liu, R. Koster, C. Draper, S. Mahanama, and G. Partyka (2016), Land surface precipitation in MERRA-2, *Journal of Climate*, 30, 1643–1664.
- Kolassa, J., R. Reichle, and C. Draper (2017), Merging active and passive microwave observations in soil moisture data assimilation, *Remote Sensing of Environment*, 191, 117-130.
- Draper, C. and R. Reichle (2015), The impact of near-surface soil moisture assimilation at sub-seasonal, seasonal, and inter-annual time scales, *Hydrology and Earth System Sciences*, 19, 4831-4844.
- Kumar, S., C. Peters-Lidard, J. Santanello, R. Reichle, C. Draper, R. Koster, G. Nearing, and M. Jasinski (2015), Evaluating the utility of satellite soil moisture retrievals over irrigated areas and the ability of land data assimilation methods to correct for unmodeled processes, *Hydrology and Earth System Sciences*, 19, 4463-4478.
- Draper, C., R. Reichle, G. De Lannoy, and B. Scarino (2015) A dynamic approach to addressing observation-minus-forecast mean differences in a land surface skin temperature data assimilation system, *Journal of Hydrometeorology*, 16, 449-464.
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- Draper, C., R. Reichle, G. De Lannoy, and Q. Liu (2012), Assimilation of passive and active microwave soil moisture retrievals, *Geophysical Research Letters*, 39, L04401.
- Draper, C., J.-F. Mahfouf, J.-C. Calvet, E. Martin, and W. Wagner (2012), Assimilation of ASCAT near-surface soil moisture into the SIM hydrological model over France, *Hydrology and Earth System Science*, 15, 3829-3841.
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