Felix W. Landerer, Ph.D.

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Interests & Relevant Experience

I am a Research Scientist in JPL's Sea Level And Ice Group. My field of study is *Hydrogeodesy*: I study the Earth's hydrosphere (e.g., the water cycle, sea level, ocean currents etc.) and its changes using tools like time-variable gravity (GRACE, GRACE Follow-On & geodetic satellites), satellite altimetry, in-situ measurements (tide gauges, GPS sensors, hydrographic floats). On Earth, the processes that couple water and energy are fundamental to today's most pressing climate science challenges. Tracking Earth's water movement and surface mass changes across the planet, monitoring changes in ice sheets and glaciers, near-surface and underground water storage, the amount of water in large lakes and rivers, as well as changes in sea level and ocean currents, provides an integrated global view of how Earth's water cycle and energy balance are evolving, with important applications for everyday life.

Professional Experience

Since 9/2019:	GRACE Follow-On Project Scientist (JPL)
Since 9/2015:	GRACE Follow-On Deputy Project Scientist (JPL)
Since 7/2010:	Research Scientist (JPL)
2008–2010:	NASA Postdoctoral Fellow (JPL)
2007–2008:	Research Scientist (Max Planck Institute for Meteorology, Hamburg)

Education

Ph.D. (2007)	Physical Oceanography (University of Hamburg / Intl. Max Planck Research School on Earth System Modelling).
M.Sc. (2004)	Geophysics (University of Kiel)

Current Projects & Assignments:

- GRACE Follow-On (Project Scientist)
- NASA Sea Level Change Team (NSLCT, 2014)
- US CLIVAR AMOC Science Team (2014)
- GRACE Science Team; OST Science Team
    - I (NASA Physical Oceanography);
- NASA obs4MIPs Working Group

Panels & Community

- IPCC-AR6 US Government Reviewer (2019)
- CLIVAR US-AMOC Group
- IPCC-AR5 Contributing Author (2013, Chapter-09)
- National Climate Assessment (NCA) Report Contributing Author (2014)
- Reviews for *National Science Foundation, NASA, Ocean Dynamics, J. Geophys. Res., Geophys. Res. Lett., Nature Geoscience, Clim. Dyn., J. Clim., Geophys. J. Intl., Surv. Geophys., etc.*
- AGU Fall Meeting session organizer and student poster judge

Awards and Honors

- JPL Voyager Award (2020)
- JPL Voyager Award (2018)
- NASA Exceptional Achievement Medal (2018)
- JPL Ed Stone Award for Outstanding Research Publication (2017)
- NASA Early Career Public Achievement Medal (2016)
- Obs4MIPS - NASA Honor Award for Group Achievement (2015)
- Otto Hahn Medal of the Max Planck Society for outstanding scientific achievements (2008);

Most Recent & Relevant Publications

1. **Landerer, F. W.**, Flechtner, F. M., Save, H., Webb, F. H., Bandikova, T., Bertiger, W. I., et al. (2020). Extending the global mass change data record: GRACE Follow-On instrument and science data performance. Geophysical Research Letters, 47, e2020GL088306. https://doi.org/10.1029/2020GL088306
2. Wu, X., Haines, B. J., Heflin, M. B., & **Landerer, F. W.** (2020). Improved globalnonlinear surface mass variationestimates from geodetic displacementsand reconciliation with GRACE data.Journal of Geophysical Research: SolidEarth,125, e2019JB018355. https://doi.org/10.1029/2019JB018355.
3. Velicogna, I., Mohajerani, Y., A, G., **Landerer, F**., Mouginot, J., Noel, B., et al. (2020). Continuity of ice sheet mass loss in Greenland and Antarctica from the GRACE and GRACE Follow-On missions. Geophysical Research Letters, 47, e2020GL087291. https://doi.org/10.1029/2020GL087291.
4. Loomis, B. D., Rachlin, K. E., Wiese, D. N., **Landerer, F. W.**, & Luthcke, S. B. (2020). Replacing GRACE/GRACE-FO C30 with satellite laser ranging: Impacts on Antarctic Ice Sheet mass change. Geophysical Research Letters, 47, e2019GL085488. https://doi.org/10.1029/2019GL085488.
5. Frederikse, **Landerer**, Caron (2019), The imprints of contemporary mass redistribution on regional sea level and vertical land motion observations, Solid Earth, 10, 1971–1987, https://doi.org/10.5194/se-10-1971-2019.
6. Tapley, Watkins, Flechtner, Reigber, Bettadpur, Rodell, Sasgen, Famiglietti, **Landerer**, et al. (2019), Contributions of GRACE to understanding climate change, Nature Climate Change, 9, 358–369 (2019).
7. Uebbing, B., Kusche, J., Rietbroek, R., & **Landerer, F. W.** (2019). Processing choices affect ocean mass estimates from GRACE. Journal of Geophysical Research: Oceans, 124. https://doi.org/10.1029/2018JC014341.
8. WCRP Global Sea Level Budget Group (2018); Global sea-level budget 1993–present, Earth Syst. Sci. Data, 10, 1551–1590, https://doi.org/10.5194/essd-10-1551-2018.
9. Rodell M., J. S. Famiglietti, D. N. Wiese, J. T. Reager, H. K. Beaudoing, **F. W. Landerer**, M.-H. Lo (2018); Emerging trends in global freshwater availability. Nature, doi: 10.1038/s41586-018-0123-1
10. Wiese, D. N., **F. W. Landerer**, and M. M. Watkins (2016), Quantifying and reducing leakage errors in the JPL RL05M GRACE mascon solution, Water Resour. Res., 52, doi:10.1002/2016WR019344.
11. **Landerer, F. W.**, D. N. Wiese, K. Bentel, C. Boening, and M. M. Watkins (2015), North Atlantic meridional overturning circulation variations from GRACE ocean bottom pressure anomalies, Geophys. Res. Lett., 42, doi:10.1002/2015GL065730.
12. Llovel, J.K. Willis, **F.W. Landerer** and I. Fukumori (2014), Deep-ocean contribution to sea level and energy budget not detectable over the past decade, Nature Climate Change, 4, doi: 10.1038/NCLIMATE2387.
13. Watkins, M. M., D. N. Wiese, D.-N. Yuan, C. Boening, **F. W. Landerer** (2015), Improved methods for observing Earth's time variable mass distribution with GRACE, JGR Solid Earth, 10.1002/2014JB011547.
14. **Landerer, F. W.**, and D. L. Volkov (2013), The anatomy of recent large sea level fluctuations in the Mediterranean Sea, Geophys. Res. Lett., 40, doi:10.1002/grl.50140.