

## **DON P. CHAMBERS**

College of Marine Science, University of South Florida, 140 7th Ave S, St. Petersburg, FL 33701

Phone: (727) 553-3351, Fax: (727) 553-1189

donc@usf.edu

### **Education:**

B.S., Aerospace Engineering, University of Texas at Austin, December 1990.

Ph. D., Aerospace Engineering, The University of Texas at Austin, December 1996.

Supervisor: Byron D. Tapley

Title of Dissertation: *Time-Varying Sea Surface Topography from Satellite Altimetry*

### **Professional Experience:**

June 2018 – present	Professor, College of Marine Science, University of South Florida
Aug. 2009 – June 2018	Associate Professor, College of Marine Science, University of South Florida
Sept. 2003 – Aug. 2009	Research Scientist, Center for Space Research, The University of Texas at Austin
June 2000 – Aug. 2003	Research Associate, Center for Space Research
Aug. 1997 – May 2000	Research Engineer/Scientist Associate IV, Center for Space Research
Jan. 1997 – Aug. 1997	Postdoctoral Fellow, Center for Space Research

### **Honors and Awards:**

2018, University of South Florida Outstanding Faculty Award

2017, elected Fellow, American Geophysical Union: “*For outstanding contributions to sea level research and ocean dynamics using satellite observations.*”

2013, Geodesy Section Bowie Lecture, American Geophysical Union: “*Using Geodesy to Better Understand Ocean Dynamics*”

2008, Geodesy Section Award, American Geophysical Union: “*For pioneering satellite geodetic investigations of global ocean circulation and sea level change*”

2003, NASA Group Achievement Award for Jason-1 Project Team

2003, NASA Group Achievement Award for GRACE Project Team

1995, Outstanding Student Paper, Geodesy Section, American Geophysical Union, Fall Meeting for “*Basin-scale, low-frequency variability of the dynamic ocean topography in the Pacific and Atlantic Oceans*”

### **Membership and Service in Technical and Professional Organizations:**

Editor, *Journal of Geophysical Research-Oceans*, 2014 – present

Member, Earth Surface and Interior panel for National Academy of Sciences Decadal Survey for Earth Science and Applications from Space, 2016-2018

Lead Author, IPCC Fifth Assessment Report Chapter 3 “Ocean Observations”, 2010-2013

Member, WCRP Global Sea Level Budget Group, 2017-present

Member, GGOS (Global Geodetic Observing System) Science Panel, 2017-present

Member, Joint NASA/ESA Working Group on future satellite gravity missions, 2013 – 2016

Member, International Space Science Institute (ISSI) Working Group (Consistency of Integrated Observing Systems monitoring the energy flows in the Earth System), 2014 - 2015

Member, NASA Ocean Surface Topography and GRACE Science Teams

Member, NASA PO.DAAC User Working Group, 2013-2018

Member, US CLIVAR Panel on Phenomena, Observations, and Synthesis, 2010-2013

Contributing Author, IPCC Fourth Assessment Report, 2004-2007  
 Member and Fellow, American Geophysical Union  
 Member, American Association for the Advancement of Science  
 Member, Whitten Medal Committee, AGU, 2010-2013  
 Session Chair, Meeting of the American Geophysical Union: 1998, 1999, 2003, 2013  
 Session Chair, Ocean Sciences Meeting: 2000  
 Session Chair, Scientific Assembly of International Association of Geodesy: 2001, 2005, 2007  
 Session Chair, European Geosciences Union General Assembly: 2004, 2005, 2008

### **Refereed Journal Articles/Book Chapters:**

\* indicates my student, \*\* indicates my Post-Doc

**H-Index = 44**

Citations calculated on 6 February 2019 from Web of Science.

### **2019**

Rashid M. M., T. Wahl, **D. Chambers**, F. Calafat, and W. Sweet (2019) An extreme sea level indicator for the contiguous United States coastline, *Nature Sci. Data*, 6, 326, doi: 10.1038/s41597-019-0333-x.

Cazenave A, Hamlington B, Horwath M, Barletta V, Benveniste J, **Chambers D**, Döll P, Hogg A, Legeais JF, Merrifield M, Meyssignac B, Mitchum G, Nerem S, Pail R, Palanisamy H, Paul F, von Schuckmann and K and Thompson P (2019) Observational Requirements for Long-Term Monitoring of the Global Mean Sea Level and Its Components Over the Altimetry Era. *Front. Mar. Sci.* 6:582.doi: 10.3389/fmars.2019.00582.

Marcos, M., G. Woppelmann, A. Mathews, R. M. Ponte, F. Birol, F. Arduin, G. Coco, A. Santamaría-Gómez, V. Ballu, L. Testut, **D. P. Chambers**, J. Stopa (2019) Coastal sea level and related fields from existing observing systems, *Surv. Geophys.*, <https://doi.org/10.1007/s10712-019-09513-3>.

Tapley, B. D., M. M. Watkins, F. Flechtner, C. Reigber, S. Bettadpur, M. Rodell, I. Sasgen, J. S. Famiglietti, F. Landerer, **D. P. Chambers**, J. T. Reager, A. S. Gardner, H. Save, E. R. Ivins, S. C. Swenson, C. Boening, C. Dahle, D. N. Wiese, H. Dobslaw, M. E. Tamisiea, Isabella Velicogna (2019) Contributions of GRACE to understanding climate change, *Nature Climate Change*, 9, 358-369, <https://doi.org/10.1038/s41558-019-0456-2>.

Meijers, A. J. S., M. P. Meredith, E. J. Murphy, **D. P. Chambers**, M. Belchier, E. F. Young (2019) The role of ocean dynamics in king penguin range estimation. *Nature Climate Change*, 9, 120-121, <https://doi.org/10.1038/s41558-018-0084-2>.

### **2018**

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>. (I was one of about two dozen authors on this paper).

**Chambers, D. P.** (2018), Using kinetic energy from altimetry to detect shifts in the positions of fronts in the Southern Ocean, *Ocean Sci.*, 14, 105–116, <https://doi.org/10.5194/os-14-105-2018>.

Bonin, J. A., **Chambers, D. P.**, and Cheng, M. (2018) Using satellite laser ranging to measure ice mass change in Greenland and Antarctica, *The Cryosphere*, 12, 71-79, <https://doi.org/10.5194/tc-12-71-2018>.

Karegar, M., T. H. Dixon, J. Kusche, and **D. P. Chambers** (2018) A New Hybrid Method for Estimating Hydrologically-induced Vertical Deformation from GRACE and a Hydrological Model: An Example from Central North America, *J. Adv. Modeling Earth Systems*, DOI: 10.1029/2017MS001181.

\*\*Cid, A., Wahl, T., **Chambers, D. P.**, & Muis, S. (2018). Storm surge reconstruction and return water level estimation in Southeast Asia for the 20th century. *J. Geophys. Res. Oceans*, 123, 437–451. doi:10.1002/2017JC013143.

## **2017**

Mitchum, G., Dutton, A., **Chambers, D. P.**, & Wdowinski, S. (2017). Sea level rise. In E. P. Chassignet, J. W. Jones, V. Misra, & J. Obeysekera (Eds.), *Florida's climate: Changes, variations, & impacts* (pp. 557–578). Gainesville, FL: Florida Climate Institute. <https://doi.org/10.17125/fci2017.ch19>

**Chambers, D. P.**, O. Andersen, S. Bettadpur, M.-H. Rio, R. Rummel, D. Wiese, Auxiliary Space-Based Systems for Interpreting Satellite Altimetry: Satellite Gravity, in *Satellite Altimetry over Oceans and Land Surfaces*, D. Stammer and A. Cazenave (eds.), Taylor & Francis, Boca Raton, FL, 2017.

**Chambers, D. P.**, A. Cazenave, N. Champollion, H. Dieng, W. Llovel, R. Forsberg, K. von Schuckmann, and Y. Wada (2017) Evaluation of the Global Mean Sea Level Budget between 1993 and 2014, *Surv. Geophys.* 38, 309-327, doi: 10.1007/s10712-016-9381-3.

Herdter, E. S., **D. P. Chambers**, C. D. Stallings, and S. A. Murawski (2017), Did the Deepwater Horizon oil spill affect growth of Red Snapper in the Gulf of Mexico?, *Fisheries Res.*, 191, 60–68, doi: 10.1016/j.fishres.2017.03.005

Peralta-Ferriz, C., F.W. Landerer, **D.P. Chambers**, D.L. Volkov, and W. Llovel (2017): Remote sensing of bottom pressure from GRACE satellites. *US CLIVAR Variations*, 15(2), 22-28.

## **2016**

Price, S.E., M. J. Hoffman, J. A. Bonin, I. M. Howat, T. Neumann, J. Saba, I. Tezaur, J. Guerber, **D. P. Chambers**, K. J. Evans, J. H. Kennedy, J. Lenaerts, W. H. Lipscomb, M. Perego, A. G. Sallinger, R. S. Tuminaro, M. R. van den Broeke, and S. M. J. Nowicki (2016), An ice sheet model validation framework for the Greenland ice sheet, *Geosci. Model Dev.*, 9, 1–16, doi:10.5194/gmd-9-1-2016.

Kosempa\*, M., and **D. P. Chambers** (2016), Mapping error in Southern Ocean transport computed from satellite altimetry and Argo, *J. Geophys. Res. Oceans*, 121, doi:10.1002/2016JC011956.

**Chambers D.P.**, and G.T. Mitchum (2016) Observing modern-day sea level rise and predicting the future, In: A. Hine, D. P. Chambers, T. D. Clayton, M. R. Hafen, and G. T. Mitchum (editors) *Sea Level Rise in Florida: Science, Impacts, and Options*, 1st edition, University Press of Florida, ISBN 978-0-8130-6289-1.

Wahl\*\*, T., and **D. P. Chambers** (2016), Climate controls multi-decadal variability in U.S. extreme sea level records, *J. Geophys. Res. Oceans*, 121, doi:10.1002/2015JC011057.

Yang, Q., T. Dixon, P. Meyers, J. Bonin, **D. Chambers**, and M. van den Broeke (2016) Recent increases in Arctic freshwater flux affects Labrador Sea convection and Atlantic overturning circulation, *Nature Communications*, 7:10525, doi: 10.1038/ncomms10525.

von Schuckmann, K., M. D. Palmer, K. E. Trenberth, A. Cazenave, **D. Chambers**, N. Champollion, J. Hansen, S. A. Josey, N. Loeb, P.-P. Mathieu, B. Meyssignac, M. Wild (2016) An imperative to monitor Earth's energy imbalance, *Nature Climate Change*, 6, 138-144, doi:10.1038/nclimate2876.

**2011-2015**

- Bonin, J. A. and **D. P. Chambers** (2015) Quantifying the resolution level where the GRACE satellites can separate Greenland's glacial mass balance from surface mass balance, *The Cryosphere*, 9, 1761-1772, doi:10.5194/tc-9-1761-2015.
- Chambers D.P.** (2015) Gravimetric Methods - Satellite Altimeter Measurements, In: Gerald Schubert (editor-in-chief) *Treatise on Geophysics*, 2nd edition, Oxford: Elsevier, pp. 117-149.
- Rodell, M., H. Beaulieu, T. L'Ecuyer, W. Olson, J. Famiglietti, P. Houser, R. Adler, M. Bosilovich, C. Clayson, **D. Chambers**, E. Clark, E. Fetzer, X. Gao, G. Gu, K. Hilburn, G. Huffman, D. Lettenmaier, W. Liu, F. Robertson, C. Schlosser, J. Sheffield, E. Wood (2015), The Observed State of the Water Cycle in the Early 21st Century, *J. Climate*, 28, 8289-8318, DOI: 10.1175/JCLI-D-14-00555.1.
- Tristan S. L'Ecuyer, H. K. Beaulieu, M. Rodell, W. Olson, B. Lin, S. Kato, C. A. Clayson, E. Wood, J. Sheffield, R. Adler, G. Huffman, M. Bosilovich, G. Gu, F. Robertson, P. R. Houser, **D. Chambers**, J. S. Famiglietti, E. Fetzer, W. T. Liu, X. Gao, C. A. Schlosser, E. Clark, D. P. Lettenmaier, and K. Hilburn, 2015: The Observed State of the Energy Budget in the Early Twenty-First Century. *J. Climate*, 28, 8319–8346. doi: <http://dx.doi.org/10.1175/JCLI-D-14-00556.1>
- Makowski\*, J. K., **D. P. Chambers**, and J.A. Bonin (2015), Using Ocean Bottom Pressure from the Gravity Recovery and Climate Experiment (GRACE) to Estimate Transport Variability in the Southern Indian Ocean, *J. Geophys. Res. Oceans*, 120, doi: 10.1002/2014JC010575
- Chambers, D. P.** (2015) Evaluation of empirical mode decomposition for quantifying multi-decadal variations and acceleration in sea level records, *Nonlin. Processes Geophys.*, 22, 157-166, doi:10.5194/npg-22-157-2015.
- Hogg, A. M., M. P. Meredith, **D. P. Chambers**, E. P. Abrahamson, C. W. Hughes, and A. K. Morrison (2015), Recent trends in the Southern Ocean eddy field, *J. Geophys. Res. Oceans*, 120, 257–267, doi:10.1002/2014JC010470
- Wahl\*\*, T., and **D. P. Chambers** (2015), Evidence for multidecadal variability in US extreme sea level records, *J. Geophys. Res. Oceans*, 120, doi:10.1002/2014JC010443.
- Chambers, D. P.** (2014), Water Cycle: Ocean's Role. In *Encyclopedia of Natural Resources: Water*. Taylor and Francis: New York, Published online: 21 Oct 2014, 882-886. doi:10.1081/E-ENRW-120047581.
- Purkey, S. G., G. C. Johnson, and **D. P. Chambers** (2014), Relative contributions of ocean mass and deep steric changes to sea level rise between 1993 and 2013, *J. Geophys. Res. Oceans*, 119, doi:10.1002/2014JC010180.
- Kosempa\*, M., and **D. P. Chambers**, (2014) Southern Ocean Velocity and Geostrophic Transport Fields Estimated by Combining Jason Altimetry and Argo Data, *J. Geophys. Res. Oceans*, 119, doi:10.1002/2014JC00985.
- Wouters, B., J. A. Bonin, **D. P. Chambers**, R. E. M. Riva, I. Sasgen, and J. Wahr (2014). GRACE, time-varying gravity, Earth system dynamics and climate change, *Rep. Prog. Phys.* 77, 116801, 41pp, doi:10.1088/0034-4885/77/11/116801.
- Hartnett, J.J., J. M. Collins, M. A. Baxter, **D. P. Chambers** (2014), Spatiotemporal snowfall trends in central New York, *J. of App. Meteor. Climat.*, 53, 2685-2697, doi:10.1175/JAMC-D-14-0084.1.
- von Schuckmann, K., J.-B. Sallée, **D. Chambers**, P.-Y. Le Traon, C. Cabanes, F. Gaillard, S. Speich, and M. Hamon (2014) Monitoring ocean heat content from the current generation of global ocean observing systems, *Ocean Science*, 10, 547-557, DOI:10.5194/os-10-547-2012.
- Calafat\*\*, F. M., **D. P. Chambers**, and M. N. Tsimplis (2014), On the ability of global sea level reconstructions to determine trends and variability, *J. Geophys. Res. Oceans*, 119, 1572–1592, doi:10.1002/2013JC009298.

- Rhein, M., S. R. Rintoul, S. Aoki, E. Campos, **D. Chambers**, R. A. Feely, S. Gulev, G. C. Johnson, S. A. Josey, A. Kostianoy, C. Mauritzen, D. Roemmich, L. D. Talley and F. Wang, 2013: Observations: Ocean. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T. F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P. M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- Johnson, G. F., and **D. P. Chambers** (2013), Ocean Bottom Pressure Seasonal Cycles and Decadal Trends from GRACE Release-05: Ocean Circulation Implications, *J. Geophys. Res. Oceans*, *118*, doi:10.1002/jgrc.20307
- Calafat\*\*, F. M., and **D. P. Chambers** (2013) Quantifying recent acceleration in sea level unrelated to internal climate variability, *Geophys. Res. Lett.*, *40*, 1-6, doi:10.1002/grl.50731.
- Bonin, J. and **D. P. Chambers** (2013) Uncertainty Estimates of GRACE Inversion Modeling Technique Over Greenland Using a Simulation. *Geophys. J. Intl.*, doi: 10.1093/gji/ggt091.
- Tsimplis, M. N., F. M. Calafat\*\*, M. Marcos, G. Jorda, D. Gomis, L. Fenoglio-Marc, M. V. Struglia, S. A. Josey, and **D. P. Chambers** (2013), The effect of the NAO on sea level and on mass changes in the Mediterranean Sea, *J. Geophys. Res. Oceans*, *118*, 944–952, doi:10.1002/jgrc.20078.
- Calafat\*\*, F. M., **D. P. Chambers**, and M. N. Tsimplis (2013) Inter-annual to decadal sea-level variability in the coastal zones of the Norwegian and Siberian Seas: The role of atmospheric forcing, *J. Geophys. Res. Oceans*, *118*, doi:10.1002/jgrc.20106.
- Chambers, D. P.**, M. A. Merrifield, and R. S. Nerem (2012), Is there a 60-year oscillation in global mean sea level?, *Geophys. Res. Lett.*, *39*, L18607, doi:10.1029/2012GL052885.
- Calafat\*\*, F. M., **D. P. Chambers**, and M. N. Tsimplis (2012), Mechanisms of decadal sea level variability in the eastern North Atlantic and the Mediterranean Sea, *J. Geophys. Res.*, *117*, C09022, doi:10.1029/2012JC008285.
- Chambers, D. P.**, J. Wahr, M. E. Tamisiea, and R. Steven Nerem (2012), Reply to Comments by Peltier et al., 2012 ("Concerning the Interpretation of GRACE Time Dependent Gravity Observations and the Influence Upon them of Rotational Feedback in Glacial Isostatic Adjustment.") *J. Geophys. Res.*, *117*, DOI: 10.1029/2012JB009441.
- Chambers, D. P.**, and J. A. Bonin (2012), Evaluation of Release-05 GRACE time-variable gravity coefficients over the ocean, *Ocean Science*, *8*, 1–10, DOI:10.5194/os-8-1-2012.
- Bonin\*\*, J., and **D.P. Chambers**, Evaluation of high-frequency oceanographic signal in GRACE data: Implications for de-aliasing, *Geophys. Res. Lett.*, *38*, L17608, doi:10.1029/2011GL048881, 2011.
- Chambers, D. P.**, ENSO-correlated fluctuations in ocean bottom pressure and wind-stress curl in the North Pacific, *Ocean Sci.*, *7*, 685-692, doi:10.5194/os-7-685-2011, 2011.
- Chambers, D. P.**, and J. Schröter, Measuring Ocean Mass Variability from Satellite Gravimetry, *J. Geodynamics*, *52*, 333-343, doi:10.1016/j.jog.2011.04.004, 2011.

## **2006-2010**

- Chambers, D. P.**, J. Wahr, M. E. Tamisiea, and R. Steven Nerem, Ocean Mass from GRACE and Glacial Isostatic Adjustment. *J. Geophys. Res.*, *115*, B11415, doi:10.1029/2010JB007530, 2010.
- Chambers, D. P.** and J. K. Willis, A Global Evaluation of Ocean Bottom Pressure from GRACE, OMCT, and Steric-Corrected Altimetry, *J. Atmos. Ocean. Tech.*, *27*, 1395-1402, DOI: 10.1175/2010JTECHO738.1, 2010.
- Jin, S., **D. P. Chambers**, and B. D. Tapley, Hydrological and oceanic effects on polar motion from GRACE and models, *J. Geophys. Res.*, *115*, B02403, doi:10.1029/2009JB006635, 2010.

- Nerem, R. S., **Chambers, D. P.**, Orbit Determination and Sea Level Rise: How Astrodynamics Informs Us of about the Climate, *J. Astronaut. Sci.*, 57, 767-776, October–December 2010.
- Nerem, R. S., **D. P. Chambers**, C. Choe, and G. T. Mitchum, Estimating mean sea level change TOPEX and from the Jason missions, *Marine Geodesy*, 33, Supplement 1, 435-446, doi: 10.1080/01490419.2010.491031, 2010.
- Church, J. A., D. Roemmich, C. M. Domingues, J. Willis, N. White, J. Gilson, D. Stammer, A. Koehl, **D. P. Chambers**, F. Landerer, J. Marotzke, J. Gregory, T. Suzuki, A. Cazenave, and P.-Y. LeTraon, Ocean temperature and salinity contributions to global and regional sea-level change, in *Understanding Sea-Level Rise and Variability*, J. A. Church, P. L. Woodworth, T. Aarup, and W. S. Wilson (eds.), Wiley-Blackwell, 2010.
- Syed, T. H., J. S. Famiglietti, **D. P. Chambers**, J. K. Willis, and K. Hilburn, Satellite-Based Global Ocean Mass Balance Reveals Water Cycle Acceleration and Increasing Continental Freshwater Discharge, 1994-2006, *Proc. National Acad. Sci.*, doi: 10.1073/pnas.1003292107, 2010.
- Willis, J. K., **D. P. Chambers**, C. K. Shum, and C-Y Kuo, Global Sea Level Rise: Recent Progress and Challenges for the Decade to Come, *Oceanography*, 23, 26-35, 2010.
- Wouters, B., and **D. P. Chambers**, Analysis of Seasonal Ocean Bottom Pressure Variability in the Gulf of Thailand from GRACE, *Global and Planetary Change*, 74, doi:10.1016/j.gloplacha.2010.08.002, 2010.
- Cadden D. D. H., B. Subrahmanyam, **D.P. Chambers**, and V.S.N. Murty, Surface and Subsurface Geostrophic Current Variability in the Indian Ocean From Altimetry, *Marine Geodesy*, 32, 19-29, DOI:10.1080/01490410802661955, 2009.
- Chambers D. P.** and J. K. Willis, Low-frequency exchange of mass between ocean basins, *J. Geophys. Res.*, 114, C11008, doi:10.1029/2009JC005518, 2009.
- Chambers D. P.**, Calculating Trends from GRACE in the Presence of Large Changes in Continental Ice Storage and Ocean Mass, *Geophys. J. Int.*, 176, 415-419, doi: 10.1111/j.1365-246X.2008.04012.x, 2009
- Maximenko N., P. Niiler, M.-H. Rio, O. Melnichenko, L. Centurioni, **D. Chambers**, V. Zlotnicki, and B. Galperin, Mean dynamic topography of the ocean derived from satellite and drifting buoy, *J. Atmos. Ocean. Tech.*, 26, 1910-1919, 2009
- Strassberg G., B. Scanlon, and **D. P. Chambers**, Evaluation of Groundwater Storage Monitoring with the GRACE Satellite: Case Study High Plains Aquifer, Central USA, *Water Resources Res.*, 45, W05410, doi:10.1029/2008WR006892, 2009.
- Syed T. H., J. Famiglietti, and **D. P. Chambers**, GRACE-based estimates of terrestrial freshwater discharge from basin to continental scales, *J. Hydrometeorology*, 10, 22-40, 2009
- Chambers D. P.** and J. K. Willis, Analysis of large-scale ocean bottom pressure variability in the North Pacific, *J. Geophys. Res.*, 113, C11003, doi:10.1029/2008JC004930, 2008
- Swenson S. C., **D. P. Chambers**, and J. Wahr Estimating geocenter variations from a combination of GRACE and ocean model output, *J. Geophys. Res.*, 113, B08410, doi:10.1029/2007JB005338, 2008
- Willis, J. K., **D. P. Chambers**, and R. S. Nerem, Assessing the Globally Averaged Sea Level Budget on Seasonal to Interannual Time Scales, *J. Geophys. Res.*, 113, C06015, doi:10.1029/2007JC004517, 2008
- Wouters B., **D. P. Chambers**, and E. J. O. Schrama, GRACE observes small-scale mass loss in Greenland, *Geophys. Res. Lett.*, 35, L20501, doi:10.1029/2008GL034816, 2008
- Chambers D. P.**, Gravimetric Methods – Spacecraft Altimeter Measurements, in *Treatise on Geophysics*, Vol. 3 – Geodesy, G. Schubert (ed.), Oxford: Elsevier Ltd, pp. 123-162, 2007

- Chambers D.**, M. Tamisiea, R. S. Nerem, J. Ries, Effects of Ice Melting on GRACE Observations of Ocean Mass Trends, *Geophys. Res. Ltrs*, 34, L05610, doi:10.1029/2006GL029171, 2007
- Vianna M. L., V. V. Menezes, and **D. P. Chambers**, A High Resolution Satellite-Only GRACE-based Mean Dynamic Topography of the South Atlantic Ocean, *Geophys. Res. Lett.*, 34, doi:10.1029/2007GL031912, L24604, 2007
- Chambers D. P.**, Evaluation of new GRACE time-variable gravity data over the ocean, *Geophys. Res. Ltrs*, 33, L17603, doi:10.1029/2006GL027296, 2006
- Chambers D.**, Observing seasonal steric sea level variations with GRACE and satellite altimetry, *J. Geophys. Res.*, 111 (C3), C03010, 10.1029/2005JC002914, 2006
- Nerem R. S., A. Cazenave, **D. P. Chambers**, L. Fu, E. W. Leuliette, G. T. Mitchum, Comment on “Estimating future sea level change from past records” by Nils-Axel Mörner, *Glob. Planet. Change*, doi:10.1016/j.gloplacha.2006.08.002, 2006

### **2000-2005**

- Chambers D. P.**, J. Wahr, R. S. Nerem Preliminary observations of global ocean mass variations with GRACE, *Geophys. Res. Ltrs*, 31, L13310, doi:10.1029/2004GL020461, 2004
- Chambers D. P.**, J. C. Ries, and T. J. Urban, Calibration and Verification of Jason-1 Using Global Along-Track Residuals with TOPEX, *Marine Geodesy, Special Issue on Jason-1 Calibration/Validation, Part 1, Vol. 26*, 305-318, 2003
- Chambers D. P.**, Effect of Sea Level Variability on the Estimation of Mean Sea Surface Gradients, *Marine Geodesy*, 25, 273-288, 2002
- Chambers D. P.**, C. A. Mehlhaff, T. J. Urban, and R. S. Nerem, Analysis of Interannual and Low-Frequency Variations in Sea Level from Altimetry and Tide Gauges, *Phys. Chem. Earth*, 27, 1407-1411, 2002
- Chambers D. P.**, C. A. Mehlhaff, T. J. Urban, D. Fujii, and R. S. Nerem, Low Frequency Variations in Global Mean Sea Level: 1950-2000, *J. Geophys. Res.*, 107, 10.1029/2001JC001089, 2002
- Chambers D. P.**, Seasonal and Low-Frequency Variability in Global and Basin-Scale Sea Level, *Vistas for Geodesy in the New Millennium, Intl. Assoc. of Geodesy Symposia, Vol. 125*, J. Adam and K. P. Schwarz (eds), Springer, Berlin, 481-486, 2002.
- Chambers D. P.**, S. A. Hayes, J. C. Ries, and T. J. Urban, New TOPEX Sea State Bias Models and Their Effect on Global Mean Sea Level, *J. Geophys. Res.*, 108 (C10), 3305, 10.1029/2003JC001839, 2003
- Chambers D. P.**, J. L. Chen, R. S. Nerem, and B. D. Tapley, Interannual Sea Level Change and the Earth's Water Mass Budget, *Geophys. Res. Ltrs*, 27, 3073-3076, 2000
- Chen, J. L., C. R. Wilson, B. D. Tapley, **D. P. Chambers**, and T. Pekker, Hydrological Impacts on Seasonal Sea Level Change, *Global and Planetary Change*, 32, 25-32, 2001
- Chen, J.L., C.K. Shum, C.R. Wilson, and **D.P. Chambers**, B.D. Tapley, Seasonal Sea Level Change from TOPEX/Poseidon Observation and Thermal Contribution, *Journal of Geodesy*, 73, 638-647, 2000
- Cunningham J. D., **D. P. Chambers**, C. O. Davis, A. Gerber, R. Hetz, J. P. McGuire, W. Pichel, Ocean Observer Study: A Proposed National Asset to Augment the Future U. S. Operational Satellite System, *Marine Tech. Soc. Journal*, 37 (3), 142-157, 2003
- Shum C., Y. Yi, K. Cheng, C. Kuo, A. Braun, S. Calmant, and **D. Chambers**, Calibration of Jason-1 altimeter over Lake Erie, *Marine Geodesy, Special Issue on Jason-1 Calibration/Validation, Part 1, Vol. 26*, 335-354, 2003
- Tapley B., J. Ries, S. Bettadpur, **D. Chambers**, M. Cheng, F. Condi, B. Gunter, Z. Kang, P. Nagel, R. Pastor, T. Pekker, S. Poole, and F. Wang, GGM02 - An Improved Earth Gravity Field Model from GRACE, *J. Geod.*, 10.1007/s00190-005-0480-z, 2005

Tapley B. D., **D. P. Chambers**, S. Bettadpur, and J. C. Ries Large Scale Ocean Circulation from the GRACE GGM01 Geoid, *Geophys. Res. Ltrs.*, 30(22), 2163, doi:10.1029/2003GL018622, 2003

### 1994-1999

**Chambers D. P.**, B. D. Tapley and R. H. Stewart, Anomalous warming in the Indian Ocean coincident with El Niño, *J. Geophys. Res.*, 104, 3035-3047, 1999

**Chambers D. P.**, B. D. Tapley and R. H. Stewart, Measuring heat storage changes in the equatorial Pacific: A comparison between TOPEX altimetry and Tropical Atmosphere-Ocean buoys, *J. Geophys. Res.*, 103 (C9), 18591-18598, 1998

**Chambers D. P.**, J. C. Ries, C. K. Shum, and B. D. Tapley, On the use of tide gauges to determine altimeter drift, *J. Geophys. Res.*, 103 (C6), 12885-12890, 1998

**Chambers D. P.**, B. D. Tapley and R. H. Stewart Reduction of geoid gradient error in ocean variability from satellite altimetry, *Mar. Geod.*, 21, 25-39, 1998

**Chambers D. P.**, B. D. Tapley and R. H. Stewart, Long-Period Ocean Heat Storage Rates and Basin-Scale Heat Fluxes from TOPEX Altimetry, *J. Geophys. Res.*, 102 (C5), 10525-10533, 1997

Chen, J. L., C. R. Wilson, **D. P. Chambers**, R. S. Nerem, and B. D. Tapley, Seasonal global water mass balance and mean sea level variations, *Geophys. Res. Ltrs.*, 25, 3555-3558, 1998

Nerem R. S., **D. P. Chambers**, E. Leuliette, G. T. Mitchum, and B. S. Giese Variations In Global Mean Sea Level During The 1997-98 ENSO Event, *Geophys. Res. Ltrs.*, 26, 3005-3008, 1999

Shum C. K., **D. P. Chambers**, J. C. Ries, B. D. Tapley, and D. N. Yuan, Determination of large scale ocean circulation and its variations using satellite altimetry, *Gravimetry and Space Techniques Applied to Geodynamics and Ocean Dynamics*, *Geophys. Monogr. Ser.*, vol. 82, AGU, Washington, D. C., 21-32, 1994

Tapley B. D., **D. P. Chambers**, C. K. Shum, R. J. Eanes, J. C. Ries, and R. H. Stewart, Accuracy assessment of the large-scale dynamic ocean topography from TOPEX/POSEIDON altimetry, *J. Geophys. Res.*, 99 (C12), 24605-24617, 1994

### Current Research Contracts and Grants

**Total Cumulative Sum Since 2000:** \$5.9 million

**Note:** I have only listed amounts that I have direct control over and not amounts sent to co-Investigators or co-PIs.

- |           |  |
|-----------|--|
| 2017-2021 | NOAA: Analysis of kinetic energy and structure functions from along-track and crossover altimeter data (Principal Investigator). <b>Total Amount:</b> \$597k   |
| 2017-2020 | NSF: Impacts of assimilating data of new sources in the partition of global steric height: A new way to evaluate existing ocean reanalyses for their usefulness in determining trends in global ocean heat content (Co-Investigator). <b>Total Amount:</b> \$70k |
| 2017-2020 | NASA: Understanding and Predicting Coastal Sea Level Variability Around the United States (Co-Investigator, Institutional PI). <b>Total Amount:</b> \$306k   |
| 2017-2019 | NOAA: An indicator for U.S. coastal extreme sea levels (Co-Investigator, Institutional PI). <b>Total Amount:</b> \$108k  |
| 2016-2020 | NASA: Quantifying Decadal Transport Variations of the Antarctic Circumpolar Current and Atlantic Meridional Overturning Circulation using GRACE and GRACE Follow-on Observations (Principal Investigator). <b>Total Amount:</b> \$494k                           |



**Previously Funded Research Contracts and Grants**

2014-2018	NASA: Improved Estimates of Southern Ocean Transport by Combining Satellite Altimetry and Temperature/Salinity Profile Data (Principal Investigator). <b>Total Amount:</b> \$349k
2013-2018	NASA: An Earth System Data Record of Earth's Surface Mass Variations from GRACE, Geodetic Satellites, and GPS (Co-Investigator, Institutional PI). <b>Total Amount:</b> \$251k
2013-2017	NASA: Investigating low-frequency barotropic transport fluctuations in the Southern Ocean, North Pacific, and Atlantic using GRACE (Principal Investigator). <b>Total Amount:</b> \$522k
2011-2014	NASA: The Response of Sea Level to Changes in Climate: Has There Been a Fundamental Shift in the Rate of Sea Level Rise? (Co-Investigator, Institutional PI). <b>Total Amount:</b> \$231k
2008-2013	NASA JPL: An Earth System Data Record of Changes in Earth Masses (Co-Investigator, Institutional PI). <b>Total Amount:</b> \$250k
2008-2013	NASA: Mass Changes in Earth's Global Water Reservoirs (Co-Investigator, Institutional PI). <b>Total Amount:</b> \$200k
2008-2013	NASA: Building a Climate Record of Sea Level Change (Co-Investigator). <b>Total Amount:</b> \$243k
2009-2013	NASA JPL: Assessing the Quality of Aquarius Sea Surface Salinity Measurements Using an Ocean State Estimation System (Co-Investigator, Institutional PI). <b>Total Amount:</b> \$80k
2008-2012	NASA: Steric Sea Level Variations from a Combination of GRACE, Jason-1, and Argo Float Data (Principal Investigator). <b>Total Amount:</b> \$427k
2007-2010	NASA: An independent assessment of the contribution of ice melt to sea level change from an analysis of satellite altimetry, satellite gravity, and ocean temperature measurements (Co-Investigator). <b>Total Amount:</b> \$169k
2005-2008	NASA: A Study of the first global measurement of the water cycle (Co-Investigator). <b>Total Amount:</b> \$150k
2004-2008	NASA: An Investigation of Very Low Frequency Sea Level Change Using Satellite Altimeter Data (Co-Investigator). <b>Total Amount:</b> \$133k
2004-2008	NASA JPL: Grace Products For Hydrology And Oceanography (Co-Investigator). <b>Total Amount:</b> \$409k
2004-2008	NASA: A Multidisciplinary Investigation of Present-Day Sea Level Change (Co-Investigator). <b>Total Amount:</b> \$180k
2004-2007	NASA Grant NNG04GF11G: Application of GRACE Data to Improving Ocean Heat Storage Estimates from Satellite Altimetry (Principal Investigator). <b>Total Amount:</b> \$239k.
2003-2006	NSF Grant OCE-0326515: Quantifying The Contribution Of Ocean Dynamics To SST Anomaly Formation (Co-Investigator). <b>Total Amount:</b> \$60k.
2000-2003	NASA: Water Mass Variability in the Earth System (Principal Investigator). <b>Total Amount:</b> \$300k.
1999-2005	NOAA IPO: Assessment of NPOESS Altimeter Accuracy (Co-Investigator)
2000-2003	NASA Grant NAG5-9163: Improvements in Global Geoid Models for Ocean Circulation Studies (Co-Investigator)

- 2000-2003 NASA Grant NAG5-9144: Reconstruction of Historical Sea Level Variations Using Tide Gauge Data and Empirical Orthogonal Functions from T/P (Principal Investigator). **Total Amount:** \$75k.
- 2000-2003 NASA JPL Grant 1226830: Sea Level Variations from Tide Gauge Data and Jason-1 Altimetry (Principal Investigator). **Total Amount:** \$75k.

**Proceedings of Technical Meetings and Technical Reports (non-reviewed):**

- Rodell, M., **D.P. Chambers**, and J.S. Famiglietti, Global Climate: Hydrological Cycle, Terrestrial Water Storage. In "State of the Climate in 2012", J. Blunden, and D. Arndt, Eds. *Bull. Amer. Meteor. Soc.*, 94, S24, 2013.
- Merrifield, M., P. Thompson, R. S. Nerem, **D. Chambers**, G. Mitchum, M. Menendez, E. Leuliette, J. J. Mara, W. Sweet, and S. Holgate, Global Oceans: Sea Level Variability and Change. In "State of the Climate in 2012", J. Blunden, and D. Arndt, Eds. *Bull. Amer. Meteor. Soc.*, 94, S68-72, 2013.
- Rodell, M., **D.P. Chambers**, and J.S. Famiglietti, Global Climate: Hydrological Cycle, Groundwater and Terrestrial Water Storage. In "State of the Climate in 2011", J. Blunden, and D. Arndt, Eds. *Bull. Amer. Meteor. Soc.*, 93, S29-30, 2012.
- Merrifield, M., P. Thompson, **D. Chambers**, G. Mitchum, M. Menendez, R. S. Nerem, E. Leuliette, L. Miller, S. Holgate, J. J. Mara, and W. Sweet, Global Oceans: Sea Level Variability and Change. In "State of the Climate in 2011", J. Blunden, and D. Arndt, Eds. *Bull. Amer. Meteor. Soc.*, 93, S81-84, 2012.
- Rodell, M., J.S. Famiglietti, **D.P. Chambers**, and J. Wahr, Global Climate: Contributions of GRACE to Climate Monitoring. In "State of the Climate in 2010", H. Dolman, B. Hall, K. Willett, and P. Thornes, Eds. *Bull. Amer. Meteor. Soc.*, 92, S50-S51, 2011.
- Rodell, M., **D.P. Chambers**, and J.S. Famiglietti, Global Climate: Groundwater and Terrestrial Water Storage. In "State of the Climate in 2010", H. Dolman, B. Hall, K. Willett, and P. Thornes, Eds. *Bull. Amer. Meteor. Soc.*, 92, S49&S52, 2011.
- Merrifield, M., G. Mitchum, E. Leuliette, **D. Chambers**, S. Nerem, P. Woodworth, S. Holgate, L. Miller, and S. Gill: Sea Level Variations. In "State of the Climate in 2010", H. Dolman, B. Hall, K. Willett, and P. Thornes, Eds. *Bull. Amer. Meteor. Soc.*, 92, S98-100, 2011.
- Chambers, D. P.**, C. A. Mehlhaff, T. J. Urban, D. Fujii, and B. D. Tapley. ENSO Variability in the Indian and Pacific Oceans from Tide Gauge Data and TOPEX/Poseidon Empirical Orthogonal Functions, *Abstracts of Presentations at Workshops during the 7<sup>th</sup> Session of the IOC Group of Experts on the Global Sea Level Observing System (GLOSS), Intergovernmental Oceanographic Commission Workshop Report 180*, 4, 2002
- Allan R., **D. Chambers**, W. Drosowsky, H. Hendon, M. Latif, N. Nicholls, I. Smith, R. Stone, Y. Tourre). Is there an Indian Ocean dipole, and is it independent of the El Nino – Southern Oscillation?, *CLIVAR Exchanges*, 6 (3), 18-22, 2001.
- Tapley, B. D., C. K. Shum, **D. P. Chambers**, G. E. Peterson, and J. C. Ries. Oceanographic results from analysis of ERS-1 altimetry, *Proceedings Second ERS-1 Symposium - Space at the Service of our Environment, ESA SP-361*, Hamburg, Germany, 489-494, 1994.

### **Presentations at Scientific Meetings († denotes an invited presentation)**

**Note:** I have only listed presentations where I was the lead author and presenter.

#### **2019**

Understanding Regional Trends in Southern Ocean Eddy Kinetic Energy, presented at NASA Ocean Surface Topography Science Team Meeting, 21-25 Oct 2019, Chicago, IL (D. P. Chambers, Yang Zhang, and Xinfeng Liang)

Evaluation of GRACE-FO over the ocean, presented at NASA GRACE-FO Science Team Meeting, 8-10 October 2019, Pasadena, CA (D. P. Chambers, J. Bonin, and J. Meyer)

Understanding Regional Trends in Southern Ocean Eddy Kinetic Energy, presented at Assembly of European Geosciences Union, Vienna, Austria, 12 April 2019 (D. P. Chambers, Yang Zhang, and Xinfeng Liang)

Mechanisms for interannual sea level variability along the Gulf of Mexico coastline, presented at NASA Sea Level Change Science Team Meeting, 11-13 March 2019, Annapolis, MD (D. P. Chambers)

#### **2018**

Toward a long record of global mean ocean mass from GRACE and satellite laser ranging, Fall Meeting of American Geophysical Union, Washington, DC, 10-14 December 2018 (D. P. Chambers and J. A. Bonin)

A long record of global mean ocean mass from GRACE, GRACE-Followon, and satellite laser ranging, NASA, GRACE Science Team meeting, Potsdam, Germany, 9-11 October, 2018 (D. P. Chambers and J. A. Bonin)

#### **2017**

Using kinetic energy measurements from altimetry to detect shifts in the positions of fronts in the Southern Ocean, NASA Ocean Surface Topography Science Team meeting, Miami, FL, 10-12 October, 2017 (D. P. Chambers and J. Meyer)

Observing bottom currents associated with the Atlantic Meridional Overturning Current (AMOC) using GRACE, NASA GRACE Science Team meeting, Austin, TX, 23-27 October, 2017 (D. P. Chambers)

Evaluation of coherent sea level variability and nonlinear vertical land motion along the Gulf of Mexico coastline, International WCRP/IOC Conference on regional Sea Level Changes and Coastal Impacts, New York city, NY, 12 July 2017 (D. P. Chambers)

† Sea level rise and climate change, Tallahassee Scientific Society Horizons 2017 Lecture Series, Tallahassee, FL, 17 May 2017 (D. P. Chambers)

#### **2016**

† Ocean Observations of Climate Change, 227<sup>th</sup> Meeting of the American Astronomical Society, Kissimmee, FL, 7 January 2016 (D. P. Chambers)

Trends in Southern Ocean Eddy Kinetic Energy, AGU/ASLO Ocean Sciences Meeting, New Orleans, LA, 23 February 2016 (D. P. Chambers)

Trends in Southern Ocean Eddy Kinetic Energy, Assembly of European Geosciences Union, Vienna, Austria, April 2016 (D. P. Chambers)

**2011-2015**

- Low-frequency transport variability in the Southern Ocean: the importance of regional variations, presented at the NASA Ocean Surface Topography Science Team Meeting, Reston VA, 22 October 2015 (D. P. Chambers, M. Kosempa, and J. Makowski).
- Low-frequency transport variability in the Southern Ocean: the importance of regional variations, presented at the NASA GRACE Science Team Meeting, Austin TX, 23 September 2015 (D. P. Chambers and J. Makowski).
- Measuring Variability of Jets in the Southern Ocean using Along-Track Satellite Altimetry and Gravimetry, XXVI Assembly of International Union of Geodesy and Geophysics, Prague, Czech Republic, July 2015 (D. P. Chambers, J. Makowski, H. Save, and C. McCullough)
- Evaluation of accuracy required by future satellite gravity missions to resolve dynamic ice changes on ice sheets and fronts of the Antarctic Circumpolar Current, XXVI Assembly of International Union of Geodesy and Geophysics, Prague, Czech Republic, July 2015 (D. P. Chambers, J. A. Bonin, and J. Makowski)
- † Measuring ocean mass variations with GRACE (and other observations), ISSI Workshop on Sea level and associated climatic components as inferred from the ESA Climate Change Initiative, Bern, Switzerland, February 2015 (D. P. Chambers)
- † (Keynote Lecture) Sea level rise: can we detect accelerations unrelated to natural variability, Wegener 2014 Conference, Leeds, United Kingdom, September 2014 (D. P. Chambers).
- † Using geodesy to better understand ocean dynamics, Bowie Lecture of American Geophysical Union, San Francisco, CA, 10 December 2013 (D. P. Chambers)
- † Ocean observations of climate change: Overview of the IPCC 5<sup>th</sup> Assessment Report, presented at the NASA Ocean Surface Topography Science Team Meeting, Boulder, CO, 9 October 2013 (D. P. Chambers)
- † Evaluation of GRACE RL05 products over the ocean, presented at Workshop on Using GRACE Data for Water Cycle Analysis and Climate Modeling, Pasadena, CA, 15-17 July 2013 (D. P. Chambers)
- Mechanisms of low-frequency mass transport between the Indo-Atlantic and Pacific Ocean basins, Assembly of European Geosciences Union, Vienna, Austria, April 2013. (Chambers, D. P., J. Makowski)
- Is there a 60-year oscillation in global mean sea level?, presented at Fall Meeting of American Geophysical Union, San Francisco, CA, 3-7 December 2012 (D. P. Chambers, S. Kwon, M. A. Merrifield, R. S. Nerem).
- † Ocean Warming and Recent Sea Level Change, presented at Sea Level Symposium sponsored by Leopoldina, the German Academy of Sciences, Potsdam, Germany, September 2012 (Chambers, D. P. and K. von Schuckmann)
- Measuring Zonal Transport Variability of the Antarctic Circumpolar Current Using GRACE Ocean Bottom Pressure, presented at GRACE Science Team Meeting, Potsdam, Germany, September 2012 (Chambers, D. P., Makowski, J.)
- ENSO-Related Fluctuations in Non-Steric Sea Level and Wind-Stress Curl in the North Pacific, presented at Fall Meeting of AGU, San Francisco, CA, December, 2011 (Chambers, D. P.)
- † Observations of historical and current-day sea level rise, XXV Assembly of International Union of Geodesy and Geophysics, Melbourne, Australia, June 2011 (Chambers, D. P.)
- † Ocean mass variations from 2003 to 2011: Implications for the Global Water Cycle, Assembly of European Geosciences Union, Vienna, Austria, April 2011. (Chambers, D. P., J. Bonin, J. Famiglietti)

† Decadal-scale non-steric sea level changes in the North Pacific, World Climate Research Program Workshop of Regional Sea Level Change, Paris, France, February 2011 ([D. P. Chambers](#)).

### **2006-2010**

Decadal-scale barotropic sea level changes in the North Pacific, presented at Fall Meeting of AGU, San Francisco, CA, December, 2010 ([D. P. Chambers](#)).

† The modern sea level observing system, presented at Fall Meeting of AGU, San Francisco, CA, December, 2010 ([D. P. Chambers](#)).

† Recent ocean results utilizing satellite gravity measurements, Workshop on Gravity from Space for Oceans, Land Ice, and Sea Level Rise, Hamburg, Germany, 29-30 September 2010 ([D. P. Chambers](#) and J. Morison).

† Measurements Needed to Understand Causes of Present-Day Sea Level Change, 4<sup>th</sup> Oceans from Space Symposium, Venice, Italy, 28 April 2010. ([D. P. Chambers](#))

† The importance of continued satellite gravity missions for understanding ocean mass variability, Assembly of European Geosciences Union, Vienna, Austria, 5 May 2010. ([D. P. Chambers](#))

† Measuring mean ocean mass variability with GRACE, NASA Sea Level Workshop, Austin, TX, 2-3 November 2009 ([D. P. Chambers](#))

† The Global Water Cycle 2003-2008: Implications for Long-Period Sea Level Change, presented at EGU General Assembly, Vienna, Austria, April, 2009 ([D. P. Chambers](#), James Famiglietti & Isabella I. Velicogna, R. Steven Nerem).

Detecting Low-Frequency Mass Exchange between Ocean Basins, presented at EGU General Assembly, Vienna, Austria, April, 2009 ([D. P. Chambers](#) and J. K. Willis).

Analysis of basin-scale mass exchange between the Atlantic/Indian Oceans and the Pacific, presented at Fall Meeting of AGU, San Francisco, CA, December, 2008 ([D. P. Chambers](#) and J. K. Willis).

† Measuring sea level change with satellites (Keynote Presentation), presented at the William Smith Meeting on Sea Level, London, England, Sept. 1-2, 2008 ([D. P. Chambers](#)).

† Measuring changes in ocean mass with GRACE, presented at the Pacific Congress on Marine Science and Technology, Honolulu, Hawaii, June 2008 ([D. P. Chambers](#)).

The hunt for Ice-Melting Fingerprints in GRACE ocean data, presented at EGU General Assembly, Vienna, Austria, April, 2008 ([D. P. Chambers](#), R. S. Nerem, and J. K. Willis).

Analysis of large-scale ocean bottom pressure variability in the North Pacific, presented at EGU General Assembly, Vienna, Austria, April, 2008 ([D. P. Chambers](#) and J. K. Willis).

† Causes and effects of sea level rise, Meeting of the National Academy of Sciences Board on Earth Sciences and Resources Mapping Science Committee, Irvine, CA, April 24, 2008 ([D. P. Chambers](#)).

Modes of low-frequency ocean bottom pressure variability in the North Pacific, presented at the 2008 Ocean Sciences Meeting, Orlando, FL, March, 2008 ([D. P. Chambers](#)).

Low-Frequency Ocean Bottom Pressure Signals in the North Pacific, presented at Fall Meeting of AGU, San Francisco, CA, December, 2007 ([D. P. Chambers](#) and J. K. Willis).

† Causes and effects of sea level rise, Meeting of the National Academy of Sciences Board on Earth Sciences and Resources Roundtable “Impacts of Coastal Inundation”, Irvine, CA, November 7, 2007 ([D. P. Chambers](#)).

Observing steric sea level variations from a combination of Jason-1, GRACE, and Argo, presented at XXIV Meeting of International Union of Geodesy and Geophysics, Perugia, Italy, July, 2007 ([D. P. Chambers](#)).

Measuring variations in mean ocean mass with GRACE, presented at EGU General Assembly, Vienna, Austria, April, 2007 ([D. P. Chambers](#), M. E. Tamisiea, and R. S. Nerem).

† Measuring variations in mean ocean mass, presented at “Satellite Observations of the Global Water Cycle Workshop”, Irvine, CA, March, 2007 ([D. P. Chambers](#)).

Analysis of Barotropic Sea Level Variations in the North Pacific Observed by GRACE, presented at Fall Meeting of AGU, San Francisco, CA, December, 2006 ([D. P. Chambers](#)).

† Orbit Selection Issues for Wide-Swath Altimeter, presented at Wide-Swath Ocean Sciences and Hydrology Workshop, Arlington, VA, October 2006 ([D. P. Chambers](#)).

† The Potential to Estimate Ocean Thermal Expansion by Combining GRACE and Satellite Altimeter Data, presented at “Understanding Sea-Level Rise and Variability”, World Climate Research Programme Workshop, Paris, France, June 2006 ([D. P. Chambers](#)).

Combining Jason-1 Altimetry and GRACE Time-Variable Gravity to Study Steric Sea Level, presented at EGU General Assembly, Vienna, Austria, April, 2006 ([D. P. Chambers](#)).

### **2000-2005**

† Assessment of GRACE Time-Variable Gravity over the Ocean, presented at Fall Meeting of AGU, San Francisco, CA, December, 2005 ([D. P. Chambers](#)).

† The NPOESS Radar Altimeter, presented at Fall Meeting of AGU, San Francisco, CA, December, 2005 ([D. P. Chambers](#), T. J. Urban, B. D. Tapley).

† Estimating heat storage from a combination of satellite altimetry and GRACE data (keynote address), presented at Dynamic Planet 2005 Conference, Cairns, Australia, August, 2005 ([D. P. Chambers](#))

Observing Steric Sea Level Variations with GRACE and Satellite Altimetry, presented at Spring Meeting of AGU, New Orleans, LA, May, 2005 ([D. P. Chambers](#))

† Determination of steric level variations from a combination of altimetry and GRACE, presented at 2nd EGU General Assembly, Vienna, Austria, April, 2005 ([D. P. Chambers](#))

GRACE observations over the ocean, presented at Fall Meeting of AGU, San Francisco, CA, December, 2004 ([D. P. Chambers](#)).

† Observing the ocean water cycle with GRACE, presented at Fall Meeting of AGU, San Francisco, CA, December, 2004 ([D. P. Chambers](#), R. S. Nerem, and J. Wahr).

† Observing Low-Frequency Variability in the Indian Ocean with Satellite Altimetry, 2004 IEEE International Geoscience and Remote Sensing Symposium, Anchorage, AK, September, 2004 ([D. P. Chambers](#) and B. Subrahmanyam).

Global Ocean Mass Variations from GRACE Gravity Fields, 2004 Joint Assembly of AGU, Montreal, Quebec, May, 2004 ([D. P. Chambers](#), R. S. Nerem, J. Wahr)

† Evaluation of rates from an EOF reconstruction of sea level for 1950-2002, 1st EGU Assembly, Nice, France, April, 2004 ([D. P. Chambers](#))

Evaluation of non-steric sea level variations from GRACE, 1st EGU Assembly, Nice, France, April, 2004 ([D. P. Chambers](#))

Large-scale ocean circulation from satellite altimetry and a preliminary GRACE geoid, presented at EGS-AGU-EUG Joint Assembly, Nice, France, April, 2003 ([D. P. Chambers](#), S. Bettadpur, B. Gunter, J. Ries, B. Tapley)

Basin-scale thermosteric sea level variations: 1993-2002, presented at EGS-AGU-EUG Joint Assembly, Nice, France, April, 2003 ([D. P. Chambers](#))

- Results from the TOPEX/Poseidon-Jason Calibration/Verification Mission, presented at Fall meeting of AGU, San Francisco, CA, December, 2002 (D. P. Chambers, J. C. Ries, T. J. Urban).
- On The Use of Steric Models and Satellite Altimetry to Estimate Ocean Mass Variability, presented at XXVII General Assembly of European Geophysical Society, Nice, France, April, 2002 (D. P. Chambers, J. L. Chen, X. Hu).
- Effect of Sea Level Variability on the Estimation of Mean Sea Surface Gradients, presented at XXVII General Assembly of European Geophysical Society, Nice, France, April, 2002 (D. P. Chambers).
- Evaluation of Thermosteric Global Mean Sea Level Change from Analyzed Temperature Data: 1945-1996, presented at XXVII General Assembly of European Geophysical Society, Nice, France, April, 2002 (D. P. Chambers, R. S. Nerem, and E. W. Leuliette).
- Orbit Design Analysis for Future Altimeter Missions, presented at 2002 Ocean Sciences Meeting, Honolulu, HI, February, 2002 (D. P. Chambers, S. A. Hayes, J. C. Ries, T. J. Urban, and B. D. Tapley, G. A. Jacobs and C. N. Barron, and J. McGuire).
- † Variations in Global Mean Sea Level from a Combination of Tide Gauges and Altimetry, presented at Fall meeting of AGU, San Francisco, CA, December, 2001 (D. P. Chambers, C. A. Mehlhaff, T. J. Urban, D. Fujii, and R. S. Nerem).
- Seasonal and Low-Frequency Variability in Global and Basin-Scale Sea Level, presented at 2001 Scientific Assembly of International Association of Geodesy, Budapest, Hungary, September, 2001 (D. P. Chambers).
- ENSO Variability in the Indian and Pacific Oceans, presented at the Asia-Pacific Space Geodynamic Project Sea Level Workshop, GLOSS Experts 7<sup>th</sup> Meeting, Honolulu, Hawaii, April, 2001 (D. P. Chambers, T. J. Urban, and B. D. Tapley).
- Determination of Mean Sea Level Change from Altimeter and Tide Gauge Data, presented at XXVI General Assembly of European Geophysical Society, Nice, France, March, 2001 (D. P. Chambers, D. Fujii, C. A. Mehlhaff, R. S. Nerem, and T. J. Urban).
- Separating Sea Level Variations from Interannual Climate Signals, presented at Fall meeting of AGU, San Francisco, CA, December, 2000 (D. P. Chambers, and T. J. Urban).
- † Sea Level Variability and its Relationship to Ocean Heat-Storage Change, presented at XXV General Assembly of European Geophysical Society, Nice, France, April, 2000 (D. P. Chambers).
- Global Mean Sea Level Change and the Earth's Water Mass Budget, presented at XXV General Assembly of European Geophysical Society, Nice, France, April, 2000 (D. P. Chambers, J. L. Chen, R. S. Nerem, and B. D. Tapley).
- The TEG-4 Earth Gravity Field Model, presented at XXV General Assembly of European Geophysical Society, Nice, France, April, 2000 (D. P. Chambers, M. K. Cheng, M. C. Kim, S. Poole, J. C. Riese, and B. D. Tapley).
- Global Mean Sea Level Change and the Earth's Water Mass Budget, presented at 2000 Ocean Sciences Meeting, San Antonio, TX, January, 2000 (D. P. Chambers, J. L. Chen, R. S. Nerem, and B. D. Tapley).

### **1993-1999**

- Separation of Thermal and Mass Signals in Sea Level Variability by Combining Satellite Altimetry and Expendable Bathythermograph Data, presented at 1999 meeting of International Union of Geodesy and Geophysics, Birmingham, U.K., July, 1999 (D. P. Chambers, J. L. Chen, and B. D. Tapley).

- Improvements in Global Ocean Geoid Models for Ocean Circulation Studies, presented at 1999 meeting of International Union of Geodesy and Geophysics, Birmingham, U.K., July, 1999 (D. P. Chambers, M. C. Kim, S. Poole, J. C. Ries, and B. D. Tapley).
- Thermal and Mass Signals in Sea Level Variability from TOPEX/Poseidon, presented at Spring meeting of AGU, Boston, MA, May, 1999 (D. P. Chambers, J. L. Chen, and B. D. Tapley).
- Interannual variability in the Indian Ocean during the 1994 and 1997 El Niño events, presented at Fall meeting of AGU, San Francisco, CA, December, 1998, (D. P. Chambers and B. D. Tapley).
- † Improvements in global gravity models for ocean circulation studies, presented at Fall meeting of AGU, San Francisco, CA, December, 1998, (D. P. Chambers, M. C. Kim, S. Poole, J. C. Ries, and B. D. Tapley).
- † Interannual warming in the Indian Ocean coincident with El Niño, presented at 1997 Western Pacific Geophysics Meeting, Taipei, Taiwan, July, 1998, (D. P. Chambers and B. D. Tapley).
- Accuracy assessment of recent global geoid models, presented at Spring meeting of AGU, Boston, MA, May, 1998, (D. P. Chambers, M. C. Kim, J. C. Ries, and B. D. Tapley).
- Measuring heat-storage changes in the tropical Pacific: A comparison between TOPEX altimetry and TAO buoys, presented at Spring meeting of AGU, Baltimore MD, May, 1997, (D. P. Chambers, B. D. Tapley, and R. H. Stewart).
- Assessment of systematic errors in satellite altimetry using tide gauge measurements, presented at Fall meeting of AGU, San Francisco, CA, December, 1996, (D. P. Chambers, G. L. H. Kruizinga, J. C. Ries, C. K. Shum, and B. D. Tapley).
- † Long-period ocean heat storage rates and basin-scale heat fluxes from TOPEX altimetry, presented at Fall meeting of AGU, San Francisco, CA, December, 1996, (D. P. Chambers, B. D. Tapley, and R. H. Stewart).
- Basin-scale, low-frequency variability of the dynamic ocean topography in the Pacific and Atlantic Oceans, presented at Fall meeting of AGU, San Francisco, CA, December, 1995, (D. P. Chambers, C. K. Shum, B. D. Tapley, and R. H. Stewart).
- Large-scale, low-frequency variability of the ocean topography observed by satellite altimetry, presented at XXI General Assembly of IUGG, Boulder, CO, July, 1995, (D. P. Chambers, C. K. Shum, B. D. Tapley, and R. H. Stewart).
- Time-varying dynamic ocean topography observed by TOPEX/POSEIDON altimetry, presented at Fall meeting of AGU, San Francisco, CA, December, 1994, (D. P. Chambers, B. D. Tapley, C. K. Shum, J. C. Ries, and R. H. Stewart).
- Oceanographic results from analysis of TOPEX/POSEIDON altimetry, presented at Fall meeting of AGU, San Francisco, CA, December, 1993, (D. P. Chambers, B. D. Tapley, C. K. Shum, J. C. Ries, and G. E. Peterson).



**Teaching Experience:**

ASE372, Satellite Navigation, Dept. of Aerospace Engineering, UT-Austin, Fall, 2000.  
 ASE366L, Applied Orbital Mechanics, Dept. of Aerospace Engineering, UT-Austin, Spr., 2001-2003.  
 OCE6934.637, Data Analysis Methods, College of Marine Science, USF, Spring 2010, Fall 2011, Spring 2013-present  
 OCE6934.637, Active Satellite Oceanography, College of Marine Science, USF, Fall 2010, 2012, 2014,2016,2019  
 OCE6934.637, Global Water and Energy Cycle, College of Marine Science, USF, Spring 2011, Fall 2013, 2015  
 OCE6934.637, Dynamics of the Southern Ocean, College of Marine Science, USF, Spring 2012, Fall 2018  
 OCE6934.637, Atlantic Meridional Overturning Circulation, College of Marine Science, USF, Fall 2019

**Student Supervision****At University of Texas**

As a Research Scientist, I was not allowed to be an academic advisor for students. However, I was allowed to pay students out of my grants as Graduate Research Assistants and direct their research work, while a Faculty member supervised their academic work. The following students are ones whose research under my supervision comprised the majority of their MS thesis work. I served as a Reader on all the theses.

1998, Thesis, Dochul Yang, *Effect of Center of Mass Offset Variations on Topex/Poseidon Altimeter Crossovers* (Faculty Supervisor: B. D. Tapley).  
 2000, Thesis, Christopher A. Mehlhaff, *Reconstructing Sea Level Change from Tide Gauges and Empirical Orthogonal Functions Derived from Topex/Poseidon Altimetry*, (Faculty Supervisor: R. S. Nerem).  
 2002, Thesis Hyo-Jin Kim, *Design and Assessment of Along-Track Mean Sea Surface Models from TOPEX Altimeter Data* (Faculty Supervisor: B. D. Tapley)  
 2002, Thesis, Daisuke Fujii, *Low-Frequency Sea Level Change in the North Atlantic from Altimetry and Tide Gauges* (Faculty Supervisor: G. Lightsey)  
 2002, Thesis, Shawn Hayes, *The Determination of Relative Biases between Satellite Altimeters Using Tide Gauge Data* (Faculty Supervisor: B. D. Tapley)

**At University of South Florida**

2017, Ph.D. Dissertation, Michael Kosempa, *Southern Ocean Transport by Combining Satellite Altimetry and Temperature/Salinity Profile Data* (Major Professor)  
 2013, Master's Thesis, Jessica Makowski, *Understanding Transport Variability of the Antarctic Circumpolar Current Using Ocean Bottom Pressure* (Major Professor) [Jessica is now a research associate at the Applied Physics Laboratory, John Hopkins University]  
 2012-2015, Sarah Kwon, MS student (Major Supervisor) [Sarah left USF before completing her degree]  
 2016-present, Jordan Meyer Ph. D. student (Major Supervisor)  
 2018-present, Ryan Simonson, MS student (Major Supervisor)

2018-present, Nicholas Underwood, MS student (Major Supervisor)

2018-present, Jessica Caggiano, Ph.D. student (Major Supervisor)

### **Post-Doc Supervision**

#### **At University of South Florida**

2010-2012, Jennifer Bonin, now a scientific researcher in my lab

2011-2013, Francisco Mir Calafat, now a staff scientist at National Oceanography Centre, Liverpool, UK

2014-2016, Thomas Wahl, now an Assistant Professor at the University of Central Florida

2016-2017, Alba Cid Carrera, now a research scientist at IH Cantabria in Spain

#### **Service to College of Marine Science and University of South Florida**

Ongoing Chair, CMS Space Committee

Ongoing Member, CMS Curriculum Committee

Ongoing Member, CMS Honors and Awards Committee

Ongoing Member, CMS Admissions Committee

Ongoing Member, CMS Dean's Advisory Committee

2010 to 2013 Member, USF Research Council

2015 to 2016 Member, USF Research Strategic Planning Committee

2016,2017 Chair, CMS Faculty Review Committee

2015 to 2016 Member, CMS Integrated Marine Science Exam (IMSE) Committee

2013 to 2014 Chair, CMS Physical Oceanography Faculty Search Committee

2012 to 2013 Member, CMS Chemical Oceanography Faculty Search Committee

2012 to 2013 Member, CMS Paleo-Oceanography Faculty Search Committee

April 2011 Member, CMS Faculty Review Committee

2012 to 2013 Member, CMS Eminent Scholars Lecture Committee

2010 Member, CMS Dean Search Committee

2009 to 2010 Member, CMS Endowed Research Associate Search Committee