

SURUI XIE

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EDUCATION

Ph.D., Geology, University of South Florida, USA	2020
M.E., Geodesy and Survey Engineering, Wuhan University, China	2014
B.E., Geodesy and Geomatics Engineering, Wuhan University, China	2011

APPOINTMENTS

Assistant Professor, University of Houston	2022–Present
Postdoctoral Scholar, University of California San Diego	2020–2022
Research Assistant, University of South Florida	2017–2020
Teaching Assistant, University of South Florida	2014–2017
Geodesist, Chinese National Antarctic Research Expedition	2011–2013

AWARDS

Scripps Institution of Oceanography Postdoctoral Award, UC San Diego	2020
Chinese National Scholarship	2009

EDITORIAL RESPONSIBILITIES

Guest Editor: Frontiers in Marine Science, Special Issue on Ocean Observation, 2022

Manuscript Reviewer: Earth, Planets and Space; Journal of Glaciology; Marine Geodesy; Remote Sensing of Environment; The Cryosphere

TEACHING EXPERIENCE

Co-Instructor for <i>Special Topics in Geophysics: Seafloor Geodesy</i>	Spring 2021
TA for several USF undergraduate courses	Fall 2014 – Spring 2017

FIELD WORK AND EXPEDITION EXPERIENCE

Geological field investigations in the Mojave Desert of the Eastern California Shear Zone	2016, 2018
Mountain glacier studies at Gangotri of the west Himalayas	2016
Marine-terminating glacier studies at Jakobshavn Isbræ of Greenland	2015
Volcano topography and deformation studies at Nevado del Ruiz in Colombia	2015
Multiple geodetic surveys in Antarctica	2011–2013

LAB EXPERIENCE

Terrestrial cosmogenic nuclide exposure dating in the Quaternary Geochronology Laboratories at the University of Cincinnati.	Jun-Jul 2015, Jul 2016
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PUBLICATIONS

In Progress

Mejia, J.Z., Gulley, J.D., Trunz, C., Covington, M.D., Bartholomäus, T.C., Breithaupt, C., **Xie, S.**, Dixon T.H. (under review in *Geophysical Research Letters*). Spatial and temporal lags in melt water propagation through the Greenland Ice Sheet hydraulic system.

Hatfield, W., Elliott, D., Wyatt, F., **Xie, S.**, Zumberge, M. (accepted, *Earth and Space Science*). Results from a Decade of Optical Fiber Strainmeters at Piñon Flat Observatory.

Zumberge, M., **Xie, S.**, Wyatt, F., Steckler, M.S., Hatfield, W., Li, G., Elliott, D., Dixon, T., Bridgeman, J., Chamberlain, E., Allison, M., Törnqvist, T. (accepted, *Journal of Geophysical Research: Earth Surface*). Novel Integration of Geodetic and Geologic Methods for High-Resolution Monitoring of Subsidence in the Mississippi Delta.

Published Papers (,)

- Xie, S.** (2022). Continuous measurement of sea ice freeboard with tide gauges and GNSS interferometric reflectometry. *Remote Sensing of Environment*, 280, 113165, doi:10.1016/j.rse.2022.113165.
- Xie, S.**, Chen, J., Dixon, T.H., Weisberg, R.H., Zumberge, M.A. (2021). Offshore sea levels measured with an anchored spar-buoy system using GPS interferometric reflectometry. *Journal of Geophysical Research: Oceans*, 126(11), doi:10.1029/2021JC017734.
- Mejia, J.Z., Gulley, J.D., Trunz, C., Covington, M.D., Bartholomaus, T.C., **Xie, S.**, Dixon T.H. (2021). Isolated cavities dominate Greenland Ice Sheet dynamic response to lake drainage. *Geophysical Research Letters*, 48, doi:10.1029/2021GL094762.
- Xie, S.**, Dixon, T.H., Malservisi, R., Jiang, Y., Protti, M., Muller, C. (2020). Slow slip and inter-transient locking on the Nicoya megathrust in the late and early stages of an earthquake cycle. *Journal of Geophysical Research: Solid Earth*, 125, doi:10.1029/2020JB020503.
- Vaňková, I., Nicholls, K.W., **Xie, S.**, Parizek, B.R., Voytenko, D., Holland, D.M. (2020). Depth-dependent artifacts resulting from ApRES signal clipping. *Annals of Glaciology*. 61(81), 108–113, doi:10.1017/aog.2020.56.
- Deng, F., Dixon, T.H., **Xie, S.** (2020). Surface deformation and induced seismicity due to fluid injection and oil and gas extraction in western Texas. *Journal of Geophysical Research: Solid Earth*, 125, doi:10.1029/2019JB018962.
- Gallant, E., Deng, F., Connor, C., Dixon, T., **Xie, S.**, Saballos, J.A., Guitiérrez, C., Myhre, D., Connor, L., Zayac, J., LaFemina, P., Charbonnier, S., Richardson, J., Malservisi, R., Thompson, G. (2020). Deep and rapid thermo-mechanical erosion by a small-volume lava flow. *Earth and Planetary Science Letters*, 537, doi:10.1016/j.epsl.2020.116163.
- Xie, S.**, Law, J., Russell, R., Dixon, T.H., Lembke, C., Malservisi, R., Rodgers, M., Iannaccone, G., Guardato, S., Naar, D.F., Calore, D., Fraticelli, N., Brizzolara, J., Gray, J.W., Hommeyer, M., Chen, J. (2019). Seafloor geodesy in shallow water with GPS on an anchored spar buoy. *Journal of Geophysical Research: Solid Earth*, 124, 12116–12140, doi:10.1029/2019JB018242.
- Deng, F., Rodgers, M., **Xie, S.**, Dixon, T.H., Charbonnier, S., Gallant, E.A., López Velez, C.M., Ordoñez, M., Malservisi, R., Voss, N.K., Richardson, J.A. (2019). High-resolution DEM generation from multiple remote sensing data sources for improved volcano hazard assessment – a case study at Nevado del Ruiz, Colombia. *Remote Sensing of Environment*, 233, 111348, doi:10.1016/j.rse.2019.111348.
- Xie, S.**, Dixon, T.H., Holland, D.M., Voytenko, D., Vaňková, I. (2019). Rapid iceberg calving following removal of tightly packed pro-glacial mélange. *Nature Communications*, 10, 3250, doi:10.1038/s41467-019-10908-4.
- Zhao, J., Yang, Q., Cheng, B., Leppäranta, M., Hui, F., **Xie, S.**, Chen, M., Yu, Y., Tian, Z., Li, M., Zhang, L. (2019). Spatial and temporal evolution of landfast ice near Zhongshan Station, East Antarctica, over an annual cycle in 2011/2012. *Acta Oceanologica Sinica*, 38(5), 51–61, doi:10.1007/s13131-018-1339-5.
- Xie, S.**, Gallant, E., Wetmore, P.H., Figueiredo, P.M., Owen, L.A., Rasmussen, C., Malservisi, R., Dixon, T.H. (2019). A new geological slip rate estimate for the Calico Fault, eastern California: Implications for geodetic versus geologic rate estimates in the Eastern California Shear Zone. *International Geology Review*, 61(13), 1613–1641, doi:10.1080/00206814.2018.1531272.
- Vaňková, I., Voytenko, D., Nicholls, K.W., **Xie, S.**, Parizek, B.R., Holland, D.M. (2018). Vertical structure of diurnal englacial hydrology cycle at Helheim Glacier, East Greenland. *Geophysical Research Letters*, 45, 8352–8362, doi:10.1029/2018GL077869.

- Dixon, T.H., **Xie, S.** (2018). A kinematic model for the evolution of the Eastern California Shear Zone and Garlock Fault, Mojave Desert, California. *Earth and Planetary Science Letters*, 494, 60–68, doi:10.1016/j.epsl.2018.04.050.
- Xie, S.**, Dixon, T.H., Voytenko, D., Deng, F., Holland, D.M. (2018). Grounding line migration through the calving season at Jakobshavn Isbræ, Greenland, observed with terrestrial radar interferometry. *The Cryosphere*, 12(4), 1387–1400, doi:10.5194/tc-12-1387-2018.
- Lei, J., Li, F., Zhang, S., Xiao, C., **Xie, S.**, Ke, H., Zhang, Q., Li, W. (2018). Ocean Tides Observed from A GPS Receiver on Floating Sea Ice Near Chinese Zhongshan Station, Antarctica. *Marine Geodesy*, 41(4), 353–367, doi:10.1080/01490419.2018.1454370.
- Yuan, L., Li, F., Zhang, S., **Xie, S.**, Xiao, F., Zhu, T. and Zhang, Y. (2017). Antarctic ice sheet slope and aspect based on ICESat’s repeat orbit measurement. *ISPRS Archives*, XLII-2/W7, 1579–1583, doi:10.5194/isprs-archives-XLII-2-W7-1579-2017.
- Xie, S.**, Dixon, T.H., Voytenko, D., Holland, D.M., Holland, D., Zheng, T. (2016). Precursor motion to iceberg calving at Jakobshavn Isbræ, Greenland, observed with terrestrial radar interferometry. *Journal of Glaciology*, 62(236), 1134–1142, doi:10.1017/jog.2016.104. **(issue front cover)**
- Xie, S.**, Li, F., Zhao, J., Zhang, S. (2014). Estimation of sea ice thickness at Zhongshan station in Antarctica based on a combination of GPS and tide observations. *Geomatics and Information Science of Wuhan University*, 39(10), 1153–1157, doi:10.13203/j.whugis20130048.

Miscellanea

- Rodgers, M., Deng, F., Dixon, T.H., Glennie, C.L., James, M.R., Malservisi, R., Van Alphen, R., **Xie, S.** (2022). Geodetic Applications to Geomorphology. Book chapter in: Shroder, J.J.F. (Ed.), *Treatise on Geomorphology*, vol. 2. Elsevier, Academic Press, pp. 34–55, ISBN: 9780128182345, doi:10.1016/B978-0-12-818234-5.00084-5.
- Xie, S.** (2020). Shallow water seafloor geodesy: GPS on an anchored spar buoy. *Ph.D. Diss., University of South Florida, Tampa*, <https://digitalcommons.usf.edu/etd/8312>.
- Dixon, T.H., **Xie, S.**, Law, J., Russell, R., Malservisi, R., Lembke, C. (2019). SUBGEO, UNAVCO, Inc., GPS/GNSS observations dataset, doi:10.7283/TM3V-P845.

CONFERENCE PRESENTATIONS

- Xie, S.**, Chen, J., Dixon, T., Hastings, M., Karegar, M., Zumberge, M. (2022). Shallow water seafloor and sea surface geodesy: a semi-rigid spar buoy equipped with GPS. Ocean Sciences Meeting. **(Oral)**
- Xie, S.**, Zumberge, M., Mellors, R. (2021). Earthquake strain sensing using optical fiber interferometers. SCEC Annual Meeting. **(Poster)**
- Xie, S.**, Dixon, T.H., Protti, M., Malservisi, R., Jiang, Y., Muller, C. (2020). Shallow versus deep slow slip events on the Nicoya megathrust observed with GPS. Fall Meeting of the American Geophysical Union, Online. **(Poster)**
- Xie, S.**, Dixon, T.H., Holland, D.M., Voytenko, D., Vaňková, I. (2018). Rapid iceberg calving following removal of tightly packed pro-glacial mélange at Jakobshavn Isbræ, Greenland. Fall Meeting of the American Geophysical Union, Washington, D.C., USA. **(Poster)**
- Figueiredo, P., Rasmussen, C., **Xie, S.**, Wetmore, P.H., Owen, L.A., Dixon, T.H. (2018). Geological slip rate estimate for the Calico Fault at Newberry Springs, California: new age constraints from optically stimulated luminescence dating. Fall Meeting of the American Geophysical Union, Washington, D.C., USA. **(Poster, presenting author)**
- Xie, S.**, Dixon, T.H., Voytenko, D., Deng, F., Holland, D.M., Holland, D. (2017). Ice speed variation driven by tidal currents near the terminus of Jakobshavn Isbræ, Greenland, observed with terrestrial radar interferometry. Fall Meeting of the American Geophysical Union, New Orleans, LA, USA. **(Poster)**

- Dixon, T.H., **Xie, S.**, Malservisi, R., Lembke, C., Iannaccone, G., Law, J., Rodgers, M., Russel, R., Voss, N. (2017). Measurement of shallow water sea floor motion with GPS on a rigid buoy: system design and preliminary analysis. Fall Meeting of the American Geophysical Union, New Orleans, LA, USA. (**Poster, presenting author**)
- Wetmore, P.H., **Xie, S.**, Gallant, E., Owen, L.A., Dixon, T.H. (2017). A new geological slip rate estimate for the Calico fault, Eastern California: Implications for geodetic versus geologic rate estimates in the Eastern California shear zone. Fall Meeting of the American Geophysical Union, New Orleans, LA, USA. (**Poster, presenting author**)
- Xie, S.**, Wetmore, P.H., Owen, L.A., Gallant, E., Dixon, T.H. (2016). Evidence for a high slip rate of the Calico fault in the Eastern California Shear Zone. Fall Meeting of the American Geophysical Union, San Francisco, CA, USA. (**Oral**)
- Xie, S.**, Dixon, T.H., Voytenko, D., Holland, D.M., Holland, D., Zheng, T. (2016). Precursor motion to iceberg calving at Jakobshavn Isbræ, Greenland, observed with terrestrial radar interferometry. International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean, La Jolla, CA, USA. (**Oral**)
- Xie, S.**, Voytenko, D., Holland, D.M., Dixon, T.H. (2015). Calving and velocity variations observed by Terrestrial Radar Interferometry at Jakobshavn Isbræ, Greenland, in 2015. Fall Meeting of the American Geophysical Union, San Francisco, CA, USA. (**Poster**)