

SURUI XIE

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EDUCATION

University of South Florida, Tampa, Florida, USA *Projected Spring 2020*

Ph.D., Geology

- Dissertation: Seafloor geodesy in shallow water with GPS on an anchored spar buoy
- Advisor: Timothy H. Dixon, Rocco Malservisi (co-advisor)

Wuhan University, Wuhan, Hubei, China *Jun 2014*

M.E., Geodesy and Survey Engineering

- Thesis: Current crustal movements in Antarctica from GPS measurements
- Advisor: Fei Li

Wuhan University, Wuhan, Hubei, China *Jun 2011*

B.E., Geodesy and Geomatics Engineering (Outstanding graduate)

- Thesis: Orbit integrator design for a Martian probe

RESEARCH EXPERIENCE

Geodesy Lab at the University of South Florida, Tampa, Florida, USA

Research Assistant *Fall 2017–*

Space/terrestrial/marine geodesy (GPS, InSAR, ground-based radar, buoy), fault slip rate (geologic and geodetic methods), tidewater glacier dynamics.

Quaternary Geochronology Laboratories at the University of Cincinnati, Cincinnati, Ohio, USA

Visiting Student *Jun-Jul 2015, Jul 2016*

Terrestrial cosmogenic nuclide exposure dating.

The 28th Chinese National Antarctic Research Expedition, Zhongshan Station, Antarctica

Geodesist *Nov 2011 – Jan 2013*

Geodetic surveying and mapping, tide gauge calibration and maintenance.

TEACHING EXPERIENCE

TA for *History of Life* *Spring 2016 – Spring 2017*

TA for *Dynamic Earth: Introduction to Physical Geology* *Fall 2015*

TA for *Introduction to Earth Science* *Spring 2015*

TA for *Geology For Engineers* *Fall 2014*

AWARDS

GSA Graduate Student Research Grant *2019*

Tharp Endowed Scholarship, University of South Florida *2015, 2016, 2017*

Outstanding Graduate, Wuhan University *2011*

Chinese National Scholarship *2009*

PROFESSIONAL SERVICE

Reviewer for: The Cryosphere

FIELD 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
Geodetic surveys in Antarctica	2011–2013

COMPUTER SKILLS

- Programming languages: Python, Fortran, Shell, C++, Matlab, HTML
- Software packages: GAMIT/GLOBK/TRACK, GipsyX, SNAP, GMT, ObsPy, QGIS, GIMP, Gnuplot, L^AT_EX
- Operating systems: Linux, macOS, Microsoft Windows

INSTRUMENT SKILLS

- Static and kinematic GPS
- Terrestrial radar interferometer
- Theodolite and total station
- Optical and digital level

LANGUAGES

Chinese (native), English (fluent)

PUBLICATIONS

Submitted manuscripts

- Xie, S.**, Law, J., Russell, R., Dixon, T.H., Lembke, C., Rodgers, M., Malservisi, R., Iannaccone, G., Guardato, S., Naar, D.F., Calore, D., Fraticelli, N., Brizzolara, J., Gray, J.W., Hommeyer, M., Chen, J., (**in review**). Seafloor geodesy in shallow water with GPS on an anchored spar buoy. *JGR: Solid Earth*.
- 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., (**in revision**). 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*.

Published papers (*More information on and*)

- 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.
- 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. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, 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.

PRESENTATIONS

(More information on )

- 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.**, Gallant, E., Wetmore, P., 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. GSA Annual Meeting, Seattle, WA, USA. (**Oral**)
- 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**)