Lin Liu — Curriculum Vitae

Earth System Science Programme
Faculty of Science
The Chinese University of Hong Kong

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Education

Ph.D. in Geophysics, University of Colorado at Boulder, USA — 2011
B.Sc. in Geophysics, Wuhan University, China — 2005

Research Interests

- Cryosphere Geophysics
- Geodesy
- Near Surface Geophysics
- Remote Sensing
- Interactions of the solid earth with the atmosphere, the ocean, and the cryosphere

Professional Experience

The Chinese University of Hong Kong (CUHK) — 2014–present
  Assistant Professor, Earth System Science Programme, Faculty of Science
  Research Fellow, Institute of Environment, Energy and Sustainability
  Research Fellow, Institute of Space and Earth Information Science
Visiting Scholar, Stanford University — 2014–present
George Thompson Postdoctoral Fellow, Stanford University — 2011–2013
Research Assistant, University of Colorado — 2006–2011

Teaching Experience

Hydrogeology (ESSC3220, co-teach with T.F. Wong), CUHK — Fall 2014
Remote Sensing: Principles and Applications (ESSC4540), CUHK — Fall 2014
Solid Earth Dynamics (ESSC2010), CUHK — Spring 2014, 2015
Undergraduate Research Mentor, Stanford University — 2012–2013
Teaching Assistant, Experimental Physics, University of Colorado — 2005–2006
Teaching Assistant, Electricity and Magnetism, University of Colorado — 2005–2006

Honors and Awards (since graduate school)

International Travel Award, International Association of Geodesy — 2013
George Thompson Postdoctoral Fellowship, Stanford University — 2011–2013
NASA Earth and Space Science Fellowship — 2008–2011
CIRES Graduate Research Assistant Fellowship, University of Colorado — 2006–2007

Publications

Schaefer, K., **L. Liu**, A. Parsekian, E. Jafarov, A. Chen, T. Zhang, A. Gusmeroli, H. A. Zebker, and T. Schaefer (2015), Remotely Sensed Active Layer Thickness (ReSALT) at Barrow, Alaska using Interferometric Synthetic Aperture Radar (InSAR), in press, *Remote Sensing*.

Liu, L., E. Jafarov, K. Schaefer, B. M. Jones, H. Zebker, C. Williams, J. Rogan, and T. Zhang (2014), InSAR detects increase in surface subsidence caused by an Arctic tundra fire, *Geophysical Research Letters*, 41, 3906–3913, doi:10.1002/2014GL060533.

Liu, L., Schaefer, K., Gusmeroli, A., Grosse, G., Jones, B. M., Zhang, T., Parsekian, A. D., and Zebker, H. A (2014), Seasonal thaw settlement at drained thermokarst lake basins, Arctic Alaska, *The Cryosphere*, 8, 815–826, doi:10.5194/tc-8-815-2014.

Khan, S. A., K. H. Kjær, M. Bevis, J. L. Bamber, J. Wahr, K. K. Kjeldsen, A. A. Bjørk, N.J. Korsgaard, L. A. Stearns, M. R. Broeke, **L. Liu**, N. K. Larsen, I. S. Muresan (2014), Sustained mass loss of the Northeast Greenland ice sheet triggered by regional warming, ***Nature Climate Change***, 4, 292–299, doi:10.1038/nclimate2161.

Mu. C, T. Zhang, P. F Schuster, K. Schaefer, K. P. Wickland, D. A. Repert, **L. Liu**, and G. Cheng (2014), Carbon and geochemical properties of cryosols on the North Slope of Alaska, *Cold Regions Science and Technology*, 100, 59–67, doi:10.1016/j.coldregions.2014.01.001.

Gusmeroli, A., **L. Liu**, T. Zhang, K. Schaefer, and T. Schaefer, A ground-penetrating radar study of active layer stratigraphy at a thermokarst site in Arctic Alaska, U.S.A., in press, *Arctic Antarctic and Alpine Research.*

Liu, L., C. Millar, R. Westfall, and H. Zebker (2013), Surface motion of active rock glaciers in the Sierra Nevada, California, USA: inventory and a case study using InSAR, *The Cryosphere.*, 7, 1109-1119, doi:10.5194/tc-7-1109-2013.

Parsekian, A., G. Grosse, J. Walbrecker, M. Muller-Petke, K. Keating, **L. Liu**, B. Jones, and R. Knight (2013), Detecting unfrozen sediments below thermokarst lakes with Surface Nuclear Magnetic Resonance, *Geophysical Research Letters*, 40, 1–6, doi:10.1002/grl.50137.

Wahr, J., S. A. Khan, T. Van Dam, **L. Liu**, J. H. van Angelen, M. R. van den Broeke, and C. M. Meertens (2013), The use of GPS horizontals for loading studies, with applications to northern California and southeast Greenland, *J. Geophys. Res.*, 118, 17951806, doi:10.1002/jgrb.50104.

Nielsen, K., S. A. Khan, G. Spada, J. Wahr, M. Bevis, **L. Liu**, and T. Van Dam, Vertical and horizontal surface displacements near Jakobshavn Isbræ driven by melt-induced and dynamic ice loss, *J. Geophys. Res.*, 118, 1837–1844, doi:10.1002/jgrb.50145.

Liu, L., J. Wahr, I. Howat, S. A. Khan, I. Joughin, and M. Furuya (2012), Constraining ice mass loss from Jakobshavn Isbræ (Greenland) using InSAR-measured crustal uplift, *Geophys. J. Int*, 188: 994–1006.

Liu, L., K. Schaefer, T. Zhang, and J. Wahr (2012), Estimating 1992–2000 average active layer thickness on the Alaskan North Slope from remotely sensed surface subsidence, *J. Geophys. Res.*, 117, F01005.

Liu, L., T. Zhang, and J. Wahr (2010), InSAR measurements of surface deformation over permafrost on the North Slope of Alaska, *J. Geophys. Res.*, 115, F03023.

Khan, S. A., **L. Liu**, J. Wahr, I. Howat, I. Joughin, T. Van Dam, and K. Fleming (2010), GPS measurements of crustal uplift near Jakobshavn Isbræ due to glacial ice mass loss. *J. Geophys. Res.*, 115, B09405.

Shen W., **L. Liu**, and J. Ning (2007), The inner core's super rotation and its influences on the gravity field, *Chinese Journal of Geophysics* (in Chinese), 50(2), 430–436.

Papers Under Review:

Liu, L., Schaefer, K., Chen, A., Gusmeroli, A., Zebker, H. A., and Zhang, T., Measuring Thermokarst Subsidence Using InSAR, submitted to *Journal of Geophysical Research.*

Chen, A., A. Parsekian, K. Schaefer, E. Jafarov, S. Panda, **L. Liu**, T. Zhang, and H. Zebker, Ground-penetrating radar measurements of active layer thickness on the North Slope of Alaska, submitted to *Geo-*

physics.

Papers In Preparation:
Liu, L. and H. Zebker, Seasonal variation of the cryopsheric systems on the Alaskan Arctic coast from InSAR analysis using Ice-phase ERS-2 data, to be submitted to *Remote Sensing of Environment.*

Liu, L., S. A. Khan, M. Furuya, M. Bevis, and H. Zebker, Accelerated ice mass loss of Upernavik Isstrom in 2010 from GPS bedrock uplift and SAR offset tracking measurements.

Haase, E, M. Furuya, N. Korsgaard, J. Wahr, **L. Liu**, K. Kjeldsen, K. Kjær, and S. A. Khan, Chronology and alteration of cyclic drainage events for ice-dammed Lake Tiningnilik, Greenland in 2010, to be submitted to *Annals of Glaciology.*

Furuya, M., **L. Liu**, S. A. Khan, and J. Wahr, Surface velocity time-series at Sarqardlip Sermia, a moderate outlet glacier in west Greenland: 1992 to 2010.

Published Data Products:
Liu, L., K. Schaefer, A. Chen, A. Gusmeroli, E. Jafarov, S. Panda, A. Parsekian, T. Schaefer, H. A. Zebker, T. Zhang. 2015. Pre-ABoVE: Remotely Sensed Active Layer Thickness, Barrow, Alaska, 2006-2011. Data set. Available on-line [http://daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1266

Liu, L., K. Schaefer, A. Chen, A. Gusmeroli, E. Jafarov, S. Panda, A. Parsekian, T. Schaefer, H. A. Zebker, T. Zhang. 2015. Pre-ABoVE: Remotely Sensed Active Layer Thickness, Prudhoe Bay, Alaska, 1992-2000. Data set. Available on-line [http://daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1267

Other Publications (non-peer reviewed):
Liu, L., C. Millar, R. Westfall, and H. Zebker (2013), Taking a Census of California Rock Glaciers from Space, Mountain Views, Volume 7, No 2, November 2013.

Liu, L., (2011), Studying changes in the cryosphere using radar interferometry: permafrost surface subsidence and glacial unloading deformation, *PhD thesis*, University of Colorado.

Liu, L., T. Zhang, K. Schaefer, and J. Wahr, InSAR Observations Revealed Surface Subsidence Over Permafrost in Northern Alaska, Alaska Satellite Facility News and Notes, 2011 Spring Volume.

Active Research Grants

Hong Kong Research Grant Council Early Career Scheme Grant 2014–present
Title: Mass Balance of Greenland Outlet Glaciers: Non-secular Variations From Space Geodetic Measurements
PI: Lin Liu

CUHK Direct Grant 2014–present
Title: Radar Remote Sensing and Field Investigation of Permafrost Changes in Svalbard
PI: Lin Liu

NASA Terrestrial Ecology 2013–2015
Title: Remotely-Sensed Active Layer Thickness (ReSALT) Product Derived from InSAR Data over North American Arctic Regions
PI: Kevin Schaefer, Co-Is: Lin Liu, Albert Chen, and Howard Zebker

NSF Arctic 2012–2015
Title: Collaborative Research: Exploring the Dynamics of the Active Layer and Near-

Surface Permafrost across the North Slope of Alaska
PIs: Tingjun Zhang and Howard Zebker, Co-Is: Lin Liu and Kevin Schaefer

Field Experience

Field study of alpine permafrost on the Qinghai-Tibet Plateau	2014
Field geophysical study of active layer and permafrost on the North Slope of Alaska	2009, 2012–2014
Surface Nuclear Magnetic Resonance study of thermokarst lakes in Fairbanks, Alaska	2012
Field study of structural geology in Canyonlands and Arches National Parks, Utah	2005

Professional Services

Reviewer for *Journal of Geophysical Research*, *Geophysical Research Letters*, *Remote Sensing of Environment*, *The Cryosphere*, *Soil Science Society of America Journal*, *Earth Surface Processes and Landforms*, *International Journal of Geographical Information Science*, *Scientific Reports*, National Science Foundation, Research Grant Council of Hong Kong.

Team member, Vulnerability of Permafrost Carbon Research Coordination Network

Session Convener and Chair, 'Advances in InSAR Data Processing for Earth System Applications', AGU Meeting 2014

Session Convener and Co-chair, 'Advances in Geophysical Characterization of Permafrost Systems', AGU Meeting 2013

Judge for the Outstanding Student Paper Awards, AGU Fall Meetings 2011–2014

Society Memberships

American Geophysical Union, since 2006

International Glaciological Society, since 2010

Permafrost Young Researchers Network, since 2008

Outreach Activities

Public talk on the Arctic, Hong Kong Jockey Club Museum of Climate Change	2014
Interviewed with *Radio and Television Hong Kong* on global climate change	2014
Interviewed with *Headline Daily* on Greenland and sea level change	2014