Lin Liu Curriculum Vitae

Earth System Science Programme Lab website: cryocuhk.github.io Email: liulin@cuhk.edu.hk Faculty of Science The Chinese University of Hong Kong ORCID: 0000-0002-9581-1337 Education Ph.D. in Geophysics, University of Colorado at Boulder, USA (Advisor: John Wahr) 2011 B.Sc. in Geophysics, Wuhan University, China 2005 Research Interests • Cryosphere • Geodesv and Geophysics • Remote Sensing • Deep Learning Applications in Earth System Science • Interactions of Solid Earth with Cryosphere, Atmosphere, and Ocean Honors and Awards (since graduate school) Exemplary Teaching Award, Faculty of Science, CUHK 2016 George Thompson Postdoctoral Fellowship, Stanford University 2011 - 2013NASA Earth and Space Science Fellowship 2008 - 2011CIRES Graduate Research Assistant Fellowship, University of Colorado 2006-2007 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 - 2013Research Assistant, University of Colorado 2006 - 2011Teaching Experience Fall 2016-2018 Exploring the Earth System (ESSC1000), CUHK Solid Earth Dynamics (ESSC2010), CUHK Spring 2014-2019 Applied Geophysics (ESSC4110 & EASC5110), CUHK Fall 2017 Engineering Geology and Applied Geophysics (co-taught with T-f Wong), CUHK Spring 2016 Remote Sensing: Principles and Applications (ESSC4540), CUHK Fall 2014, 2016, 2018

2014 - 2018

Fall 2014

2012 - 2013

2005-2006

2005-2006

Research Frontiers in Earth and Atmospheric Sciences (EASC5001/5002), CUHK

Hydrogeology (ESSC3220, co-taught with T-f Wong), CUHK

Teaching Assistant, Experimental Physics, University of Colorado

Teaching Assistant, Electricity and Magnetism, University of Colorado

Undergraduate Research Mentor, Stanford University

- **Publications** (Annotations: supervised graduate student, postdoc<sup>×</sup>, and visiting student<sup>⋄</sup>)
- 1. Zhang, B.\*, **L. Liu**, S. A. Khan, T. van Dam, A. A. Bjørk, Y. Peings, <u>E. Zhang</u>, M. Bevis, Y. Yao, and B. Noël, Geodetic and model data reveal different spatio-temporal patterns of transient mass changes over Greenland from 2007 to 2017, *Earth and Planetary Science Letters*, accepted.
- 2. Chen, X., L. Liu, A. Bartsch (2019), Detecting soil freeze/thaw onsets in Alaska using SMAP and ASCAT data, Remote Sensing of Environment, 220, 59–70, doi:10.1016/j.rse.2018.10.010.
- 3. Wang, S., W. Xu, C. Xu, Z. Yin, R. Bürgmann, **L. Liu**, and G. Jiang<sup>×</sup> (2019), Changes in ground-water level possibly encourage shallow earthquakes in central Australia: The 2016 Petermann Ranges earthquake, *Geophysical Research Letters*, 46, doi:10.1029/2018GL080510.
- 4. Michaelides, R. J., H. A. Zebker, K. Schaefer, A. Parsekian, L. Liu, J. Chen, S. Natali, S. Ludwig, and S. Schaefer (2019), Inference of the impact of wildfire on permafrost and active layer thickness in a discontinuous permafrost region using the remotely sensed active layer thickness (ReSALT) algorithm, Environmental Research Letters, 14(3), 035007, doi:10.1088/1748-9326/aaf932.
- 5. Huang, L., L. Liu, T. Zhang, and L. Jiang (2018), Automatic mapping of thermokarst landforms from remote sensing images using deep learning: A case study in the Northeastern Tibetan Plateau, *Remote Sensing*, 10(12), 2067, doi:10.3390/rs10122067.
- Liu, L. and K. M. Larson (2018), Decadal changes of surface elevation over permafrost area estimated using reflected GPS signals, The Cryosphere, 12, 477–489, doi:10.5194/tc-12-477-2018.
- Hu, Y.\*, L. Liu, K. M. Larson, K. M. Schaefer, J. Zhang, and Y. Yao (2018), GPS Interferometric Reflectometry reveals cyclic elevation changes in thaw and freezing seasons in a permafrost area (Barrow, Alaska), Geophysical Research Letters, 45, 5581–5589, doi:10.1029/2018GL077960.
- 8. Zhang, B.×, E. Zhang, L. Liu, S. A. Khan, T. van Dam, Y. Yao, M. Bevis, V. Helm (2018), Geodetic measurements characterize the short-term changes of glacial mass near Jakobshavn Isbræ (Greenland) from 2007 to 2017, Earth and Planetary Science Letters, 503, 216–226, doi:10.1016/j.epsl.2018.09.029.
- 9. Chen, J., L. Liu, T. Zhang, B. Cao, H. Lin (2018), Using Persistent Scatterer Interferometry to map and quantify permafrost thaw subsidence: a case study of Eboling Mountain on the Qinghai-Tibet Plateau, Journal of Geophysical Research: Earth Surface, 123, 2663–2676, doi:10.1029/2018JF004618.
- Chen, J., Günther, F., Grosse, G., Liu, L., and Lin, H. (2018), Sentinel-1 InSAR measurements of elevation changes over Yedoma uplands on Sobo-Sise Island, Lena Delta, Remote Sensing, 10(7), 1152, doi:10.3390/rs10071152.
- 11. Ran, J.\*, Vizcaino, M., Ditmar, P., van den Broeke, M. R., Moon, T., Steger, C. R., Enderlin, E. M., Wouters, B., Noël, B., Reijmer, C. H., Klees, R., Zhong, M., **L. Liu**, and Fettweis, X. (2018) Seasonal mass variations show timing and magnitude of meltwater storage in the Greenland ice sheet, *The Cryosphere*, 12, 2981–2999, doi:10.5194/tc-12-2981-2018.
- Schuster, P. F., K. M. Schaefer, G. R. Aiken, R. C. Antweiler, J. F. Dewild, J. D. Gryziec, A. Gusmeroli, G. Hugelius, E. Jafarov, D. P. Krabbenhoft, L. Liu, N. Herman-Mercer, C. Mu, D. A. Roth, T. Schaefer, R. G. Striegl, K. P. Wickland, and T. Zhang (2018), Permafrost stores a globally significant amount of mercury, Geophysical Research Letters, 45, 1463–1471, doi:10.1002/2017GL075571.
- 13. Wu, Z.<sup>\dightarrow</sup>, L. Zhao, **L. Liu**, L. Tian, R. Zhu, H. Zhou, Z. Gao (2018), Surface deformation monitoring in the permafrost regions over Tibetan Plateau using Sentinel-1 data, *Sciences in Cold and Arid Regions*, 10(2), 114–125, doi:10.3724/SP.J.1226.2018.00114.
- Jafarov E., A. D. Parsekian, K. Schaefer, L. Liu, A. Chen, S. Panda, T. Zhang (2018), Estimating active layer thickness and volumetric water content from ground penetrating radar measurements in Barrow, Alaska, Geoscience Data Journal, 4, 72–79, doi:10.1002/gdj3.49.
- 15. Zhang, B.×, **L. Liu**, S. A. Khan, T. van Dam, <u>E. Zhang</u>, and Y. Yao (2017), Transient variations in glacial mass near Upernavik Isstrøm (west Greenland) detected by the combined use of GPS and GRACE data, *Journal of Geophysical Research: Solid Earth*, 122, 10,626–10,642, doi:10.1002/2017JB014529.

- Liu, L., S. A. Khan, T. van Dam, <u>J. H. Y. Ma</u>, and M. Bevis (2017), Annual variations in GPS-measured vertical displacements near Upernavik Isstrøm (Greenland) and contributions from surface mass loading, *Journal of Geophysical Research: Solid Earth*, 122, 677–691, doi:10.1002/2016JB013494.
- 17. Wang, X.<sup>⋄</sup>, **L. Liu**, L. Zhao, T. Wu, Z. Li, and G. Liu (2017), Mapping and inventorying active rock glaciers in the northern Tien Shan of China using satellite SAR interferometry, *The Cryosphere*, 11, 997–1014, doi:10.5194/tc-11-997-2017.
- Iwahana G., M. Uchida, L. Liu, W. Gong, F. Meyer, R. Guritz, T. Yamanoguchi, and L. Hinzman (2016), Field evidence and InSAR detection of thermokarst after a tundra wildfire, using ALOS-PALSAR, Remote Sensing, 8(3), 218, doi:10.3390/rs8030218.
- Chen, A., A. Parsekian, K. Schaefer, E. Jafarov, S. Panda, L. Liu, T. Zhang, and H. Zebker (2016), Ground-penetrating radar-derived measurements of active-layer thickness on the landscape scale with sparse calibration at Toolik and Happy Valley, Alaska, Geophysics, 81(2), H1-H11, doi:0.1190/geo2015-0124.1.
- 20. Liu, L., Schaefer, K., Chen, A., Gusmeroli, A., Zebker, H. A., and Zhang, T. (2015), Remote sensing measurements of thermokarst subsidence Using InSAR, *Journal of Geophysical Research: Earth Surface*, 120, 1935–1948, doi:10.1002/2015JF003599.
- 21. Jones, B. M., G. Grosse, C. D. Arp, E. Miller, L. Liu, D. J. Hayes, and C. F. Larsen (2015), Recent Arctic tundra fire initiates widespread thermokarst development, *Scientific Reports*, 5:15865, doi:10.1038/srep15865.
- 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, Remote Sensing, 7, 3735–3759, doi:10.3390/rs70403735.
- 23. Gusmeroli, A., **L. Liu**, T. Zhang, K. Schaefer, T. Schaefer, and G. Grosse (2015), Active layer stratigraphy and organic layer thickness at a thermokarst site in Arctic Alaska identified using Ground Penetrating Radar, *Arctic Antarctic and Alpine Research*, 47(2), 195–202, doi:10.1657/AAAR00C-13-301.
- 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.
- 26. 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.
- 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.
- 29. 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.
- 30. 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, *Journal of Geophysical Research: Solid Earth*, 118, 1795–1806, doi:10.1002/jgrb.50104.
- 31. Nielsen, K., S. A. Khan, G. Spada, J. Wahr, M. Bevis, L. Liu, and T. Van Dam (2013), Vertical and horizontal surface displacements near Jakobshavn Isbræ driven by melt-induced and dynamic ice loss,

- Journal of Geophysical Research: Solid Earth, 118, 1837–1844, doi:10.1002/jgrb.50145.
- 32. 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, *Geophysical Journal International*, 188: 994–1006, doi:10.1111/j.1365-246X.2011.05317.x.
- 33. 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, *Journal of Geophysical Research: Earth Surface*, 117, F01005, doi:10.1029/2011JF002041.
- 34. Liu, L., T. Zhang, and J. Wahr (2010), InSAR measurements of surface deformation over permafrost on the North Slope of Alaska, *Journal of Geophysical Research: Earth Surface*, 115, F03023.
- 35. 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. *Journal of Geophysical Research: Solid Earth*, 115, B09405, doi:10.1029/2010JB007490.
- 36. 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 in Review:

37. Zhang, E., L. Liu, and L. Huang, Automatically delineating the calving front of Jakobshavn Isbræ from multi-temporal TerraSAR-X images: a deep learning approach, *The Cryosphere Discussions*, https://doi.org/10.5194/tc-2019-14.

#### Published Data Products (selected):

- 38. Liu, L., K. M. Larson (2018), Surface elevation changes near Barrow (Alaska) measured using reflected GPS signals. PANGAEA, https://doi.pangaea.de/10.1594/PANGAEA.885935
- 39. Hu, Y., L. Liu, K. M. Larson (2018), The decadal reflector heights for SG27 in Barrow, Alaska (2007-2016). PANGAEA, https://doi.pangaea.de/10.1594/PANGAEA.884941
- 40. Zhang, B., L. Liu, S. A. Khan, T. van Dam, E. Zhang, and Y. Yao (2017), GPS and GRACE inferred uplifts and extracted transient and seasonal signals due to glacial mass change near Upernavik Isstrm, PANGAEA, https://doi.org/10.1594/PANGAEA.880159
- 41. Wang, X., **L. Liu**, L. Zhao, T. Wu, Z. Li, and G. Liu (2017), An inventory of active rock glaciers in the northern Tien Shan of China compiled using satellite SAR interferometry, PANGAEA, https://doi.pangaea.de/10.1594/PANGAEA.874616
- 42. Jafarov, E., A. Parsekian, K. Schaefer, **L. Liu**, A. Chen, S.K. Panda, and T. Zhang (2016), Pre-ABoVE: Active Layer Thickness and Soil Water Content, Barrow, Alaska, 2013. ORNL DAAC, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1355
- 43. Chen, A., A. Parsekian, K. Schaefer, E. Jafarov, S.K. Panda, **L. Liu**, T. Zhang, and H.A. Zebker. 2015. Pre-ABoVE: Ground-penetrating Radar Measurements of ALT on the Alaska North Slope. 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/1265
- 44. 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
- 45. 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):

- 46. Panda S., K. Schaefer, **L. Liu**, E. Jafarov, A. Parsekian, A. Chen, Connecting lake area change, ground subsidence and permafrost carbon dynamics in Prudhoe Bay, *Changing Ice: A Newsletter of Cryosphere Research in Alaska*, December 2015.
- 47. Liu, L. (2015) Melting Glaciers in High Asia and their Impacts on Water Sustainability, CUHK Sustainable Campus, No 10, October 2015.
- 48. Contributing author to Bartsch et al. (2014) Requirements for Monitoring of Permafrost in Polar Regions: A community white paper in response to the WMO Polar Space Task Group.
- 49. 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.
- 50. Liu, L., (2011), Studying changes in the cryosphere using radar interferometry: permafrost surface subsidence and glacial unloading deformation, *PhD thesis*, University of Colorado.
- 51. 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 Projects**

- 1. GNSS-RECIPE: Global Navigation Satellite System Reflectometry Studies of Elevation Changes in Permafrost Areas (PI, Hong Kong Research Grants Council (RGC) General Research Fund) 2019—present
- 2. Kinematics and dynamics of active rock glaciers in western China (PI, Hong Kong RGC General Research Fund)

  2018—present
- 3. Earth observation to investigate the characteristics and changes of the cryosphere in High Mountain Asia (Co-I, NRSCC/ESA Dragon 4 Programme) 2016—present
- 4. Investigation of characteristics and mechanism of earthquakes associated with the Hutubi gas reservoir (Co-I, Hong Kong NSFC/RGC Joint Research Scheme) 2016—present
- 5. Radar remote sensing investigations on thermokarst dynamics on the Qinghai-Tibet Plateau, China (PI, Hong Kong RGC General Research Fund) 2016–present

#### Completed Research Projects

- Mass Balance of Greenland Outlet Glaciers: Non-secular Variations From Space Geodetic Measurements (PI, Hong Kong RGC Early Career Scheme Grant)

  2015–2018
- The combined use of L- and P-band radar to retrieve active layer thickness over Arctic permafrost (PI, CUHK Direct Grant for Research)
- 3. Synergistic investigations of surface deformation in permafrost areas using field and remote sensing observations (Co-PI, Hong Kong RGC Germany/Hong Kong Joint Research Scheme) 2016–2017
- 4. Radar Remote Sensing and Field Investigation of Permafrost Changes in Svalbard (PI, CUHK Direct Grant for Research) 2014–2015
- Remotely-Sensed Active Layer Thickness (ReSALT) product derived from InSAR data over North American Arctic regions (Co-I, NASA Terrestrial Ecology Program)
   2013–2016
- 6. Collaborative Research: Exploring the Dynamics of the Active Layer and Near-surface Permafrost across the North Slope of Alaska (Co-I, NSF Arctic Natural Science Program) 2012–2015

### Research Students Supervised

## CUHK Postgraduates

- Joseph H.Y. Ma, Understanding temporal changes of glacial dynamics with numerical modeling: A case study of Upernavik Isstrøm, Greenland, MPhil, 2014–16 (now PhD student at National University of Singapore)
- Xiyu Chen, Detecting landscape freeze/thaw onsets and states using active and passive microwave remote sensing data, PhD, 2015–19 (expected)
- Lingcao Huang, Mapping non-lake thermokarst landforms on the Tibetan Plateau using remote sensing and deep learning, PhD, 2016–19 (expected)
- Jie Chen, Studying permafrost and active layer dynamics in Tibet and Arctic by multi-temporal radar interferometry, PhD, co-supervised with Hui Lin, 2015–19 (expected)
- Enze Zhang, PhD, 2016–20 (expected)
- Yan Hu, PhD, 2017–20 (expected)
- Jiahua Zhang, PhD, 2017–20 (expected)

Postdocs: Bo Hu (2015), Zhiwei Zhou (2016–17), Bao Zhang (2017–18), Guoyan Jiang (2016–present), Jiangjun Ran (2018)

CUHK Undergraduates (25 since 2014)

Visting Students: Enze Zhang (USTC, 2015), Weiyu Zheng (USTC, 2016), Xiaowen Wang (SWJTU, 2016-17), Wanwan Shao (Lanzhou U, 2016), Zhenming Wu (CAS, 2017), Jiahui Wang (USTC, 2017), Yongxin Liu (Wuhan U, 2017), Yufeng Hu (Wuhan U, 2017–18), Weifan Zhou (Jiling U, 2018)

Stanford SURGE: Elena Baluyut (Saint Louis U), Manuel Pichardo (Utah State U), Chris Cumberbatch (Morehouse College)

### University, College, and Department Services

| Member, Undergraduate committee, Earth System Science Programme, CUHK                     | 2014-present   |
|---|----------------|
| Member, Graduate committee, Graduate Division of Earth and Atmospheric Sciences, CUHK     | X 2014–present |
| Department coordinator, Chung Chi College, CUHK   | 2015-present   |
| Institutional representative for CUHK, UNAVCO and WInSAR                                  | 2015 - present |
| Member, Expert Committee of the Jockey Club Museum of Climate Change, CUHK                | 2019-present   |
| Member, Search committee of assistant and associate professors, Earth System Science, CUH | IK 2018        |
| Member, Review panel of Master of Science in GeoInformation Science, CUHK                 | 2017           |
| Member, Search committee of lecturer, Earth System Science, CUHK                          | 2015           |
| Library committee, Earth System Science , CUHK  | 2014           |

#### **Professional Services**

Reviewer for Journal of Geophysical Research, Geophysical Research Letters, Remote Sensing of Environment, Remote Sensing, IEEE Transactions on Geoscience and Remote Sensing, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, The Cryosphere, Soil Science Society of America Journal, Earth Surface Processes and Landforms, Scientific Reports, IPCC's Special Report on Ocean and Cryosphere in a Changing Climate, US National Science Foundation, Netherlands Space Office, Hong Kong Research Grants Council, etc.

#### Scientific Committee Member

| • 5th International Workshop on Rock Physics  | 2019 |
|---|------|
| • The 2nd international conference of Digital Belt and Road (DBAR 2017) & The 3rd international |      |
| conference on remote sensing applications in tropical and subtropical areas (RSATSA 2017)       | 2017 |
| • The 3rd International Conference on Sensors and Models in Photogrammetry and Remote Sensing   | 2015 |
| • The 8th World Chinese Geosciences Congress  | 2015 |

# Team member

| Team member   |                                 |  |
|---|---------------------------------|--|
| • International Permafrost Association Action Group 'Towards a Permafrowithin the GTN-P database'   | st Thaw Subsidence Product 2018 |  |
| • International Permafrost Association Action Group 'Rock Glacier Inventori                         |                                 |  |
| <del>-</del>  |                                 |  |
| • Vulnerability of Permafrost Carbon Research Coordination Network                                  | 2012–present                    |  |
| Session convener and co-chair for international meetings  |                                 |  |
| • Recent Advances in SAR Technology for Earth Observation   | AGU Meeting 2016                |  |
| • Scientific Exploration of the Earth with Multi-modal Remote Sensing: InSAR and the New Sentinel-3 |                                 |  |
| Mission   | AGU Meeting 2015                |  |
| • Advances in InSAR Data Processing for Earth System Applications                                   | AGU Meeting 2014                |  |
|   | _                               |  |
| • Advances in Geophysical Characterization of Permafrost Systems                                    | AGU Meeting 2013                |  |
| Judge for the Outstanding Student Paper Awards  | AGU Fall Meetings 2011–2016     |  |
| Member of thesis committee  |                                 |  |
|   | 2010                            |  |
| • Tanghua Li, University of Hong Kong   | 2018                            |  |
| • Xiaowen Wang, Southwest Jiaotong University   | 2017                            |  |
| • Keren Dai, Southwest Jiaotong University  | 2017                            |  |
|   |                                 |  |
| Outreach Activities   |                                 |  |
| Exhibition on permafrost carbon feedbacks, Jockey Club Museum of Climate                            | Change 2017–present             |  |
| Discussion panelist, public screening of 'Ice and the sky'  | 2015                            |  |
|   |                                 |  |
| Public talk on the Arctic   | 2014 – 2017                     |  |
| • Hong Kong Jockey Club Museum of Climate Change  |                                 |  |
|   |                                 |  |

Last updated: March 21, 2019

2014

2014

• 13th Lau Oi Wah Memorial Science Lecture Series

 $\bullet$  CUHK Knowledge Enrichment Programme for Secondary School Students Interview with Radio and Television Hong Kong on global climate change

Interview with  $Headline\ Daily$  on Greenland and sea level change