

科研方向

I am interested in understanding and characterizing geodynamic phenomena at subduction zone(eg. Volcano). My current focuses include:

- Geodynamics in subduction zone
- Heat flux anomaly around volcano arc

教育经历

南卫理公会大学

地球物理博士在读

导师: 路中 教授

美国, 德克萨斯州, 达拉斯

2020 年 8 月至今

中国科学技术大学

地球物理学本科学位

中国, 合肥

2016 年 9 月 – 2020 年 6 月

技能

编程 C, Python, Matlab, L^AT_EX, Bash

工具 Vim, Git, Linux

语言 英语, 普通话

已发表论文

1. Y. Okada, "Surface deformation due to shear and tensile faults in a half-space," *Bulletin of the Seismological Society of America*, vol. 75, no. 4, pp. 1135–1154, August /1985.
2. A. Ferretti, C. Prati, and F. Rocca, "Permanent scatterers in SAR interferometry," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 39, no. 1, pp. 8–20, Jan./2001.
3. R. Bamler and P. Hartl, "Synthetic aperture radar interferometry," p. 54,
4. W. Zheng, J.-W. Kim, S. T. Ali, and Z. Lu, "Wastewater leakage in West Texas revealed by satellite radar imagery and numerical modeling," *Scientific Reports*, vol. 9, no. 14601, Oct. 2019.
5. J.-W. Kim, Z. Lu, and J. Kaufmann, "Evolution of sinkholes over Wink, Texas, observed by high-resolution optical and SAR imagery," *Remote Sensing of Environment*, vol. 222, pp. 119–132, Mar. 2019.
6. Y. Shi, Y. Tang, Z. Lu, J.-W. Kim, and J. Peng, "Subsidence of sinkholes in Wink, Texas from 2007 to 2011 detected by time-series InSAR analysis," *Geomatics, Natural Hazards and Risk*, vol. 10, no. 1, pp. 1125–1138, Feb. 17, 2019.
7. M. Bagnardi and A. Hooper, "Inversion of Surface Deformation Data for Rapid Estimates of Source Parameters and Uncertainties: A Bayesian Approach," *Geochemistry, Geophysics, Geosystems*, vol. 19, no. 7, pp. 2194–2211, Jul. 2018.
8. 玉. 牛, "SAR/InSAR 技术用于矿区探测与形变监测研究," 长安大学, 西安, 中国, 2015, 112 pp.

9. C. Zhao, Z. Lu, Q. Zhang, and J. de la Fuente, "Large-area landslide detection and monitoring with ALOS/PALSAR imagery data over Northern California and Southern Oregon, USA," *Remote Sensing of Environment*, vol. 124, pp. 348–359, Sep. 2012.
10. L. Zhang, Z. Lu, X. Ding, H.-s. Jung, G. Feng, and C.-W. Lee, "Mapping ground surface deformation using temporarily coherent point SAR interferometry: Application to Los Angeles Basin," *Remote Sensing of Environment*, vol. 117, pp. 429–439, Feb. 2012.
11. A. Hooper, D. Bekaert, K. Spaans, and M. Arkan, "Recent advances in SAR interferometry time series analysis for measuring crustal deformation," *Tectonophysics*, vol. 514–517, pp. 1–13, Jan. 2012.
12. A. Ferretti, A. Fumagalli, F. Novali, C. Prati, F. Rocca, and A. Rucci, "A New Algorithm for Processing Interferometric Data-Stacks: SqueeSAR," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 49, no. 9, pp. 3460–3470, Sep. 2011.
13. L. Land and G. Veni, "Electrical Resistivity Survey: I&W Brine Well, Eddy County, New Mexico," National Cave and Karst Research Institute, 2011.
14. Z. Lu and D. Dzurisin, "Ground surface deformation patterns, magma supply, and magma storage at Okmok volcano, Alaska, from InSAR analysis: 2. Coeruptive deflation, July–August 2008," *Journal of Geophysical Research*, vol. 115, B00B03 May 5, 2010.
15. A. Hooper, "A multi-temporal InSAR method incorporating both persistent scatterer and small baseline approaches," *Geophysical Research Letters*, vol. 35, no. L16302, pp. 1–5, Aug. 19, 2008.
16. Z. Lu and O.-i. Kwoun, "Radarsat-1 and ERS InSAR Analysis Over Southeastern Coastal Louisiana: Implications for Mapping Water-Level Changes Beneath Swamp Forests," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 46, no. 8, pp. 2167–2184, Aug. 2008.
17. J. Biggs, T. Wright, Z. Lu, and B. Parsons, "Multi-interferogram method for measuring interseismic deformation: Denali Fault, Alaska," *Geophysical Journal International*, vol. 170, no. 3, pp. 1165–1179, Sep. 2007.
18. A. Hooper, P. Segall, and H. Zebker, "Persistent scatterer interferometric synthetic aperture radar for crustal deformation analysis, with application to Volcán Alcedo, Galápagos," *Journal of Geophysical Research*, vol. 112, no. B7, B07407, Jul. 10, 2007.
19. Z. Lu, "InSAR Imaging of Volcanic Deformation over Cloud-prone Areas –Aleutian Islands," *Photogrammetric Engineering & Remote Sensing*, vol. 73, no. 3, pp. 245–257, Mar. 1, 2007.
20. Z. Lu, T. Masterlark, and D. Dzurisin, "Interferometric synthetic aperture radar study of Okmok volcano, Alaska, 1992–2003: Magma supply dynamics and postemplacement lava flow deformation," *Journal of Geophysical Research: Solid Earth*, vol. 110, no. B02403, Feb. 2005.
21. A. Hooper, H. Zebker, P. Segall, and B. Kampes, "A new method for measuring deformation on volcanoes and other natural terrains using InSAR persistent scatterers," *Geophysical Research Letters*, vol. 31, no. L23611, pp. 1–5, Dec. 10, 2004.
22. P. Berardino, G. Fornaro, R. Lanari, and E. Sansosti, "A new algorithm for surface deformation monitoring based on small baseline differential SAR interferograms," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 40, no. 11, pp. 2375–2383, Nov. 2002.

23. E. Rignot, "Mass Balance of Polar Ice Sheets," *Science*, vol. 297, no. 5586, pp. 1502–1506, Aug. 30, 2002.
24. Z. Lu, C. Wicks, D. Dzurisin, J. A. Power, S. C. Moran, and W. Thatcher, "Magmatic inflation at a dormant stratovolcano: 1996-1998 activity at Mount Peulik volcano, Alaska, revealed by satellite radar interferometry," *Journal of Geophysical Research: Solid Earth*, vol. 107, no. B7, ETG 4-1-ETG 4-13, Jul. 2002.
25. Y. Fialko, Y. Khazan, and M. Simons, "Deformation due to a pressurized horizontal circular crack in an elastic half-space, with applications to volcano geodesy," *Geophysical Journal International*, vol. 146, no. 1, pp. 181–190, Feb. 11, 2001.
26. A. Ferretti, C. Prati, and F. Rocca, "Nonlinear subsidence rate estimation using permanent scatterers in differential SAR interferometry," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 38, no. 5, pp. 2202–2212, Oct. 2000.
27. Z. Lu, D. Mann, J. T. Freymueller, and D. J. Meyer, "Synthetic aperture radar interferometry of Okmok volcano, Alaska: Radar observations," *Journal of Geophysical Research: Solid Earth*, vol. 105, no. B5, pp. 10 791–10 806, May 10, 2000.
28. Z. Lu, D. Mann, and J. Freymueller, "Satellite radar interferometry measures deformation at Okmok volcano," *Eos, Transactions American Geophysical Union*, vol. 79, no. 39, pp. 461–476, Sep. 29, 1998.
29. K. Mosegaard and A. Tarantola, "Monte Carlo sampling of solutions to inverse problems," *Journal of Geophysical Research: Solid Earth*, vol. 100, no. B7, pp. 12 431–12 447, Aug. 10, 1995.
30. D. Massonnet, M. Rossi, C. Carmona, F. Adragna, G. Peltzer, K. Feigl, and T. Rabaute, "The displacement field of the Landers earthquake mapped by radar interferometry," *Nature*, vol. 364, no. 6433, pp. 138–142, Jul. 1993.
31. A. K. Gabriel, R. M. Goldstein, and H. A. Zebker, "Mapping small elevation changes over large areas: Differential radar interferometry," *Journal of Geophysical Research*, vol. 94, no. B7, pp. 9183–9194, Jul. 10, 1989.
32. X.-M. Yang, P. M. Davis, and J. H. Dieterich, "Deformation from inflation of a dipping finite prolate spheroid in an elastic half-space as a model for volcanic stressing," *Journal of Geophysical Research: Solid Earth*, vol. 93, no. B5, pp. 4249–4257, May 10, 1988.
33. D. F. McTigue, "Elastic stress and deformation near a finite spherical magma body: Resolution of the point source paradox," *Journal of Geophysical Research*, vol. 92, no. B12, pp. 12 931–12 940, Nov. 10, 1987.
34. R. M. Goldstein and H. A. Zebker, "Interferometric radar measurement of ocean surface currents," *Nature*, vol. 328, no. 6132, pp. 707–709, Aug. 1987.
35. H. A. Zebker and R. M. Goldstein, "Topographic mapping from interferometric synthetic aperture radar observations," *Journal of Geophysical Research*, vol. 91, no. B5, pp. 4993–4999, Apr. 10, 1986.
36. S. H. Zisk, "A new, earth-based radar technique for the measurement of lunar topography," *The Moon*, vol. 4, no. 3-4, pp. 296–306, 1972.
37. W. K. Hastings, "Monte Carlo sampling methods using Markov chains and their applications," *Biometrika*, vol. 57, no. 1, pp. 97–109, Apr. 1970.

38. K. Mogi, "Relations between the eruptions of various volcanoes and the deformations of the ground surfaces around them," vol. 36, pp. 99–134, 1958.

学术报告

1.

荣誉

- | | |
|---------------------------|------|
| • 地学攀登奖学金, 中国科大 | 2019 |
| • 国家励志奖学金, 中国科大 | 2018 |
| • 物理研究性实验竞赛特等奖 (团体), 中国科大 | 2018 |
| • 817 海外校友奖助学金, 中国科大 | 2017 |
| • 国家励志奖学金, 中国科大 | 2017 |