**Yujie Zheng**

Curriculum Vitae

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| Division of Geological and  Planetary Sciences  Seismological Laboratory  California Institute of Technology  1200 E. California Blvd., MC252-21  Pasadena, CA 91125 | Email: [yjzheng@caltech.edu](mailto:yjzheng@caltech.edu)  www.yujiezheng.me  <https://orcid.org/0000-0001-9013-451X>  Phone: 650-946-6358 |

**Research Interests**

My research focuses on developing and applying new techniques to analyze a combination of geodetic observations – primarily Interferometric Synthetic Aperture Radar (InSAR), to better understanding changes of the Earth’s surface related to natural (e.g., active tectonics and volcanic processes, permafrost thawing/freezing) and anthropogenic processes (e.g., withdrawal of groundwater from aquifers).

**Education**

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| Stanford University, Stanford, CA |  |
| Ph.D., Geophysics, January 2020   * Thesis title: Imaging Cascadia slow slip events with modern interferometric synthetic aperture radar datasets * Committee: Howard Zebker (principal advisor), Paul Segall, Eric Dunham, Dustin Schroeder | |
| Peking University, Beijing, China |  |
| Bachelor of Science in Geophysics, July 2014Bachelor of Economics, July 2014 | |
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**Employment and Research Experience**

## Postdoctoral Scholar, California Institute of Technology 2019 – present

## Research Assistant, Stanford University 2014 – 2019

## Undergraduate Research Assistant, Peking University 2012 – 2014

**Publications**

In preparation:

* **Zheng, Y.**, Fattahi, H., Agram, P., and Simons, M., On closure phase and Systematic Bias in Multi-looked SAR Interferometry.
* **Zheng, Y.** and Zebker, H.A., Investigating Cascadia slow slip and inter-seismic deformation with Interferometric Synthetic Aperture radar
* **Zheng, Y.** and Segall, P., Constraints on absolute magma chamber volume from geodetic measurements: Trapdoor faulting in the Galapagos

Accepted:

* Wang, T., **Zheng, Y.**, Pulvirenti, F., Segall, P.,Post-2018 caldera collapse re-inflation uniquely constrain Kilauea’s magmatic system, *Journal of Geophysical Research: Solid Earth*

Published:

* **Zheng, Y.**, Zebker, H.A., and Michaeledes, R.J., 2011. A New Decorrelation Phase Covariance Model for Noise Reduction in Unwrapped Interferometric Phase Stacks, *IEEE Transactions on Geoscience and Remote Sensing, doi: 10.1109/TGRS.2021.3050087*
* **Zheng, Y.**, Zebker, H.A., and Michaeledes, R.J., "A Physics-Based Decorrelation Phase Covariance Model for Effective Decorrelation Noise Reduction in Interferogram Stacks," *In Geoscience and Remote Sensing Symposium, 2020 IEEE International (pp. 16-19). IEEE.*
* **Zheng,Y.,** 2019, Imaging Cascadia Slow Slip Events with Modern Interferometric Synthetic Aperture Radar Datasets, Ph.D. Thesis, Stanford University
* Michaelides, R.J., Zebker, H.A., **Zheng, Y.,** 2019.An Algorithm for Estimating and Correcting Decorrelation Phase from InSAR Data Using Closure Phase Triplets. *IEEE Transactions on Geoscience and Remote Sensing*, vol. 57, no. 12, pp. 10390-10397
* **Zheng, Y.** and Zebker, H.A., 2017. Phase Correction of Single-Look Complex Radar Images for User-Friendly Efficient Interferogram Formation. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 10(6), pp. 2694-2701
* Zebker, H.A. and **Zheng, Y.**, 2016, July. Robust and efficient InSAR deformation time series processing. *In Geoscience and Remote Sensing Symposium, 2016 IEEE International (pp. 3198-3200). IEEE.*
* **Zheng, Y.** and Zhou, S., 2014. The spatiotemporal variation of the b-value and its tectonic implications in North China. Earthquake Science, 27(3), pp.301-310.

**Invited Talks**

* Caltech Institute of Technology, Seismology lab Seminar, Nov 2020
* University of California, Berkeley, Active Tectonic Group Seminar, Oct 2018

**Conference Presentations**

* **Zheng, Y.**, Fattahi, H., Agram, P., Simons, M., 2021, June. Closure Phase and Systematic Bias in Multi-looked SAR Interferometry. *Fringe 2021 Workshop*
* **Zheng, Y.**, Fattahi, H., Agram, P., Simons, M., 2020, December. Assessing closure phase and its impact on InSAR time-series. *2020 American Geophysics Union Fall Meeting, Abstract G004-0029*
* Wang, T., Segall, P**., Zheng, Y.**, 2020, December. Illuminating Kilauea’s magmatic plumbing system: physics-based modeling of post 2018 simultaneous inflation and deflation. *2020 American Geophysics Union Fall Meeting, Abstract V002-0005*
* **Zheng, Y.**, Zebker, H.A. and Michaelides, RJ., 2020, September. A Physics-Based Decorrelation Phase Covariance Model for Effective Decorrelation Noise Reduction in Interferogram Stacks. *2020 IEEE International Geoscience and Remote Sensing Symposium.*
* Segall. P., Wong, YQ, Heimisson, ER, **Zheng, Y** and Anderson KR, 2019, December, Physics-based Models Expand Insights Gained from Volcano Geodesy. *2019 American Geophysics Union Fall Metting, Abstract G31A-01*
* **Zheng, Y**. and Zebker, H.A., 2019, December. Are redundant interferograms really redundant? On the use of redundant interferograms to reduce noise. *2019 American Geophysics Union Fall Meeting, Abstract G21-04*
* **Zheng, Y.** and Zebker, H.A., 2018, December. Slow Slip Events in Cascadia: Observation from Sentinel-1. *2018 American Geophysics Union Fall Meeting, Abstract U11B-02 (invited)*
* Zebker, H.A. and **Zheng, Y.**, 2017, June. Slow Slip Event in Cascadia: Observation and Hazard Analysis Derived from Sentinel-1 InSAR. *Fringe 2017 Workshop*
* **Zheng, Y.**, and Zebker, H.A., 2017, December. Retrieving Ground Deformation Associated with Cascadia Slow Slip Events Using Sentinel-1 Data. *2017 American Geophysics Union Fall Meeting, Abstract G34A-04*
* **Zheng, Y.** and Zebker, H.A., 2016, December. Crustal deformation associated with Cascadia slow slip events from InSAR time-series, *2016 American Geophysics Union Fall Meeting, Abstract S33A-2812*
* **Zheng, Y.** and Zhou, S., 2014. The spatiotemporal variation of the b-value and its tectonic implications in North China, *2014 International Workshop on Statistical Seismology.*

**FELLOWSHIPS AND AWARDS**

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| American Geophysics Union Outstanding Student Paper Award | 2017 |
| The Joshua L. Soske Fellowship, School of Earth Sciences, Stanford University | 2014 |

**Teaching Experience**

## Teaching Assistant, Stanford University

## GP90/ESS113 Earthquakes and Volcanoes, upper level undergraduate course

* EE60N/GP60N Man versus Nature: Coping with Disasters Using Space Technology, Introductory Seminar for first-year undergraduate students.
* EE355/GP265 Imaging Radar and Applications, advanced graduate course

**Academic Services**

## Reviewer for Journals *Remote Sensing in Earth Systems Science, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Geoscience and Remote Sensing, Nature Communications*

* Member of *IEEE International Geoscience & Remote Sensing Symposium* Scientific Committee
* Online Reviewer for *NASA Experimental Program to Stimulate Competitive Research (EPSCoR 2017)* research proposal

**Professional Affiliation**

2014 – Present: American Geophysical Union (AGU)

2016 – Present: IEEE member