

Curriculum Vitae

Lei Sun

PhD in Geology

Department of Earth and Atmospheric Sciences, University of Houston

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Education

Doctor of Philosophy, Geology, University of Houston, 05/2018

Master of Science, Geology, University of Houston, 08/2014

Certificate in Geographic Information Systems, University of Houston, 2014

Bachelor of Science, Geochemistry, University of Science and Technology of China, 07/2011

Research Interest

Imaging spectroscopy (hyperspectral remote sensing), geographic information system, tectonics, geomorphology, gravity, laser scanning, photogrammetry, unmanned aerial vehicles

Research Experience

Post-doctoral: Tectonic geomorphology and gravity modeling in the Caribbean area and Papua New Guinea. Advisor: Dr. Paul Mann (email: pmann@central.uh.edu).

PhD Dissertation: “Integrated Ground-based Hyperspectral Imaging, Terrestrial Laser Scanning, and Geochemical Study of Geological Outcrops”. 08/2014 - 04/2018. Advisor: Dr. Shuhab Khan (email: sdkhan@central.uh.edu).

MS Thesis: “Remote Sensing of Hydrocarbon-induced Rock Alterations at Cement Field, Oklahoma”, 08/2013 – 07/2014. Advisor: Dr. Shuhab Khan (email: sdkhan@central.uh.edu).

Undergraduate Thesis: “Phengite Rb-Sr Dating and Mineral Inclusion Study of Eclogite from the Taohang Area in Sulu Orogen”, 07/2010 – 06/2011. Advisor: Dr. Fukun Chen (email: fkchen@ustc.edu.cn).

Appointments

Post-Doctoral Fellow, Department of Earth and Atmospheric Sciences, University of Houston, Houston, TX, 07/2018 to present

Teaching Assistant, Department of Earth and Atmospheric Sciences, University of Houston, Houston, TX, 08/2012 to 05/2018

Research Assistant, Department of Earth and Atmospheric Sciences, University of Houston, Houston, TX, Summer 2017, 2016, 2015, and 2014

Research Assistant, Laboratory for Radiogenic Isotope Geochemistry, Chinese Academy of Science Key Laboratory of Crust – Mantle Materials and Environments, University of Science and Technology of China, Hefei, China, 07/2011~07/2012, in Isotope Geochemistry, Geochronology, and Raman spectroscopy

Teaching Experience

Remote Sensing, fall 2017, 2016, 2015, and 2014

Introduction to GIS, spring 2018, 2017, 2016, and 2015

Mineralogy, fall 2013 and 2012

Petrography, spring 2014 and 2013

Geophysical Field Camp, summer 2016

Publications

Published in peer-reviewed journals

6. **Sun, L.** and Mann, P. (2021). Along-strike rapid structural and geomorphic transition from transpression to strike-slip to transtension related to active microplate rotation, Papua New Guinea. *Frontiers in Earth Sciences*, 9: article 652352. Doi: 10.3389/feart.2021.652352
5. **Sun, L.**, Mann, P., and Bird, D. E. (2021). Integration of tectonic geomorphology and crustal structure across the active oblique collisional zone on the island of Hispaniola, northeastern Caribbean. In Davison, I., Hull, J. N. F., and Pindell, J. eds, *The Basins, Orogens and Evolution of the Southern Gulf of Mexico and Northern Caribbean*: Geological Society of London Special Publications, 504, 379-400. Doi: 10.1144/SP504-2019-242
4. **Sun, L.**, Khan, S. D., and Shabestari, P. (2019). Integrated Hyperspectral and Geochemical Study of Sediment-Hosted Disseminated Gold at the Goldstrike District, Utah. *Remote Sensing*, 11(17): 1987. Doi: 10.3390/rs11171987
3. **Sun, L.**, Khan, S. D., and Godet, A. (2018). Integrated ground-based hyperspectral imaging and geochemical study of the Eagle Ford Group in West Texas. *Sedimentary Geology*, 363: 34-47. Doi: 10.1016/j.sedgeo.2017.10.012
2. **Sun, L.**, Khan, S. D., Sarmiento, S., Lakshmikantha, M. R., and Zhou, H. (2017). Ground-based hyperspectral imaging and terrestrial laser scanning for fracture characterization in the Mississippian Boone Formation. *International Journal of Applied Earth Observations and Geoinformation*, 63: 222-233. Doi: 10.1016/j.jag.2017.08.008
1. **Sun, L.** and Khan, S. D. (2016). Ground-based hyperspectral remote sensing of hydrocarbon-induced rock alterations at Cement, Oklahoma. *Marine and Petroleum Geology*, 77: 1243-1253. Doi: 10.1016/j.marpetgeo.2016.08.019

In review or in preparation

3. Mann, P., **Sun, L.**, and Pierce, S., Strike-slip fault geometry and strain partitioning in the North America-Caribbean plate boundary zone in northern Hispaniola (Dominican Republic and Haiti). In preparation
2. Mann, P., and **Sun, L.**, Strain partitioning in the Caribbean region. In preparation
1. **Sun, L.**, Mann, P. and Hippolyte, J-C., Puerto Rico's 2019-2020 earthquake swarm: Conjugate strike-slip and normal faults within an upper-crustal intra-plate setting. In preparation

Conference Presentations

18. **Sun, L.** and Mann, P., "Gravity constraints on the tectonic evolution of the Sea of Okhotsk, northwestern Pacific Ocean". GSH Potential Fields Special Interest Group, 2021
17. **Sun, L.**, Mann, P., and Hippolyte, J-C., "Puerto Rico's 2019-2020 earthquake swarm: Conjugate strike-slip and normal faults within an upper-crustal intra-plate setting". AGU Fall Meeting Online Everywhere, 2020.
16. **Sun, L.**, Mann, P., and Hippolyte, J-C., "Integration of Tectonic Geomorphology and Earthquake Focal Mechanisms on the Puerto Rico-Virgin Islands Basement Arch". GSA Connects Online, 2020.
15. Charles, W. R., **Sun, L.**, Romito, S., and Mann, P., "Regional flexural effects of the Caribbean plate produced by its active subduction beneath northern South America". AGU Fall Meeting, San Francisco, CA, 2019
14. **Sun, L.**, Mann, P., and Bird, D., "Integration of tectonic geomorphology and crustal structure across the Bahamas-Hispaniola collisional zone, Northeastern Caribbean". AGU Fall Meeting, San Francisco, CA, 2019
13. Charles, W., **Sun, L.**, and Mann, P., "Regional flexure of the Caribbean intraplate area as a result of its subduction beneath the Northern South America margin". First HGS and EAGE Conference on Latin America, Houston, TX, 2019
12. **Sun, L.**, Mann, P., and Bird, D., "Crustal Structure of the Hispaniola Collisional Zone and Its Relation to Hydrocarbon Prospectivity". First HGS and EAGE Conference on Latin America, Houston, TX, 2019
11. **Sun, L.** and Mann, P., "Tectonic Geomorphology Reveals Areas of Active Transpression on the Island of Hispaniola (Haiti and Dominican Republic)". GeoGulf 19, Houston, TX, 2019
10. Mann, P., **Sun, L.**, and Sternbach, C., "Emerging Trends from 80 Giant Oil and Gas Fields Discovered from the Decade 2008-2007". AAPG Hedberg Meeting, Houston, TX, 2019
9. **Sun, L.**, Khan, S. D., and Shabestari, P., "Integrated Hyperspectral and Geochemical Study of Sediment-hosted Disseminated Gold at Goldstrike District, Utah". AGU Fall Meeting, Washington DC, 2018

8. **Sun, L.,** Khan, S. D., and Godet, A., “Integrated Ground-based Hyperspectral Imaging and Geochemical Study of the Eagle Ford Group in West Texas”. AGU Fall Meeting, New Orleans, LA, 2017
7. **Sun, L.,** Khan, S. D., Sarmiento, S., and Lakshmikantha, M. R., “Fracture Characterization on Virtual Outcrop Model of Mississippian Boone Formation”. AAPG Annual Convention & Exhibition, Houston, TX, 2017
6. Crockett, M., Khan, S. D., Alonso de Linaje, V., and **Sun, L.,** “A Comparative Hyperspectral Study of Hydrocarbon Seepages near Uvalde, Texas: An Analysis of Classification Method Accuracy”. GSA South-Central Section meeting, San Antonio, TX, 2017
5. Onyango, E., Khan, S. D., Talbot, R., and **Sun, L.,** “Application of Airborne and Ground-based Hyperspectral Imaging in Detecting Methane”. GSA South-Central Section meeting, San Antonio, TX, 2017
4. **Sun, L.,** and Khan, S. D., “Ground-based Hyperspectral Imaging of the Eagle Ford Formation.” GSA South-Central Section meeting, San Antonio, TX, 2017
3. **Sun, L.,** and Khan, S. D., “Ground-based Hyperspectral Remote Sensing and Terrestrial Laser Scanning of the Eagle Ford Formation”. AAPG Annual Convention & Exhibition, Calgary, AB, Canada, 2016
2. **Sun, L.,** and Khan, S. D., “Ground-based Hyperspectral Remote Sensing and Terrestrial Laser Scanning of the Eagle Ford Formation”. Gulf Coast Association of Geological Societies 65th Annual Convention, Houston, TX, 2015
1. **Sun, L.,** Khan, S. D., Hauser, D., Glennie, C. L., Snyder, C. and Okyay, U., “Ground-based Hyperspectral Remote Sensing for Mapping Rock Alterations and Lithologies: Case Studies from Semail Ophiolite, Oman and Rush Springs Sandstone, Oklahoma”. AGU Fall Meeting, San Francisco, CA, 2014

Awards

University of Houston Scholarship for Outstanding Graduate Work in Geology, 2017
 University of Houston Outstanding Academic Achievements Scholarship in Geology, 2015
 University of Houston Hess Scholarship for Outstanding Achievement in Geology, 2013
 University of Science and Technology of China Outstanding Student Scholarship, 2010
 University of Science and Technology of China Outstanding Student Scholarship, 2009
 University of Science and Technology of China Zhao Jiuzhang Scholarship, 2008
 University of Science and Technology of China Outstanding Freshman Scholarship, 2007

Professional training

7. Identifying Grant Opportunities – Postdoctoral Fellows Edition. University of Houston, May 2020
6. Developing Budgets for Grant Proposals. University of Houston, Feb. 2020
5. Early/Young Investigator Grant Proposal Workshop. University of Houston. Jan. 2020
4. Write Winning Grant Proposals Workshop. University of Houston. Nov. 2019
3. Faculty Development Workshop: “Developing the Diverse Department We Want: How do we cultivate it at the undergraduate, graduate, and faculty levels?” University of Houston. Apr. 2018
2. National Science Foundation Grant Writing Workshop. University of Houston, Feb. 2018
1. Faculty Development Workshop: “QUBES: Quantitative Undergraduate Biology Education and Synthesis: Integration of Quantitative Modeling”. University of Houston. Feb. 2018

Professional Services

2021 Reviewer, Applied Sciences
 2021 Reviewer, Remote Sensing
 2021 Reviewer, Remote Sensing
 2020 Reviewer, Remote Sensing Applications: Society and Environment
 2020 Reviewer, Journal of Geochemical Exploration
 2020 Reviewer, Remote Sensing Applications: Society and Environment
 2020 Reviewer, Sensors
 2020 Reviewer, Journal of Geochemical Exploration
 2020 Reviewer, Remote Sensing Applications: Society and Environment
 2020 Reviewer, Sensors

2020 Reviewer, Applied Sciences
2020 Reviewer, Applied Sciences
2020 Reviewer, Applied Sciences
2019 Judge for Outstanding Student Presentation Awards, AGU Fall Meeting 2019
2019 Session judges for GeoGulf 19 conference
2019 Reviewer, Minerals
2019 Reviewer, Ore Geology Reviews
2019 Reviewer, Ore Geology Reviews
2019 Reviewer, Journal of Geochemical Exploration
2019 Reviewer, Earth Science Reviews
2018 Reviewer, Earth Science Reviews
2018 Reviewer, Arabian Journal of Geosciences
2018 Reviewer, Earth Science Reviews
2017 Reviewer, Earth Science Reviews
2017 Reviewer, ISPRS Journal of Photogrammetry and Remote Sensing
2017 Reviewer, AAPG Bulletin
2016 Reviewer, ISPRS Journal of Photogrammetry and Remote Sensing

Professional Associations

AGU, GSA, AAPG