

Saeid Aminjafari

Ph.D. in Physical Geography

Affiliations	Department of Space, Earth and Environment, Chalmers University of Technology Department of Physical Geography, Stockholm University Bolin Centre for Climate Research, Stockholm University
General info	Date of Birth: 22 Jan 1988 Languages: English (C1), Persian (native), Swedish (B1), Arabic (B1)
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Education & Research

2024 – present	Postdoctoral Associate in Geoscience and Remote Sensing Department of Space, Earth and Environment, Chalmers University, Sweden. Project: Monitoring vertical ground motion - I am responsible for a project funded by the Swedish Transport Administration (Trafikverket) to estimate ground motion around and on railroads in Sweden. We use satellite data and space geodesy to estimate these motions as well as hydroclimatic and hydrogeological data to understand the main factors leading to those motions, e.g., frost and thaw, precipitation, soil characteristics, and landslides. <i>Skills: Hydrology · Remote Sensing · Earth Science · Geographic Information Systems (GIS) · Hydrogeodesy · InSAR · Altimetry · SAR · Python & MATLAB programming</i>
2019 – 2023	Ph.D. in Hydrology and Remote Sensing Department of Physical Geography, Stockholm University, Sweden. Thesis title: Monitoring Water Availability in Northern Inland Waters from Space, available on DiVA - I used Landsat images and maximum likelihood classification to quantify water occurrence and its changes in the Selenga River Delta. I used hydroclimatic data such as runoff, temperature, suspended sediment concentration, and lake water level to understand the drivers of the change in surface water occurrence. - I developed the InSAR methodology to quantify water levels in Swedish lakes. - I studied changes in a large set of lakes in Sweden and answered the questions regarding those changes and their drivers. I assessed the impact of human regulation (such as damming for hydropower, mining, irrigation, and transportation canals) on changes in lake water levels. - I also taught hydrology courses (such as advanced hydrology and Water and Land Risk Assessment) and mentored Ph.D. and master's students.

Skills: Hydrology · Remote Sensing · Earth Science · Geographic Information Systems (GIS) · Hydrogeodesy · InSAR · Altimetry · SAR · Python & MATLAB programming · Machine Learning

M.Sc. in Marine Geodesy

School of Surveying and Geospatial Engineering, University of Tehran, Iran.

2011 - 2014

- Tidal modelling
- Bathymetry & geostrophic currents
- Advanced Global Positioning System
- Monitoring embankment dam deformation with InSAR

Skills: Remote Sensing · Hydrography · Bathymetry · Geographic Information Systems (GIS) · InSAR · MATLAB & Python Programming Languages

2006 - 2010

B.Sc. in Geomatics

Tafresh University, Tafresh, Iran.

Teaching & Supervision

2020 - 2022

Advanced Hydrology 7.5 credits (Stockholm University)

Teacher assistant in Hydro-Geodesy. In this module, I taught students how to generate interferograms and interpret the fringe patterns relating to hydrologic connectivity and water level changes. I used ISCE software in this course.

2021 - 2021

Water Management and Pollution, 15 credits (Stockholm University)

Teacher assistant in optimization. In this module, students learned how to model the most efficient way to mitigate pollutants' flow in a basin. I used the Pyomo model in this course.

2021 - 2022

Co-supervision of two master's students in Hydro-Geodesy (Stockholm University)

2019 - 2021

Tellus I – Physical Geography, 15 credits (Stockholm University)

The course deals with hydrology, mass movements, rivers and flooding, oceans, coastlines, groundwater, the atmosphere and climate, arid regions, geomorphology, Quaternary geology, and global changes.

Training & Conferences

2021

Professional Development Course: Teaching and Learning in Higher Education (UL-1) at the Centre for the Advancement of University Teaching (CeUL), Stockholm University

2013 - 2022

Active participation in many international conferences such as the ESA Living Planet Symposium (2013 & 2022), EGU (2020-2022), AGU (2021-2022), Swedish Climate Symposium (2022), and Baltic Sea Science Congress (2019 & 2021 & 2023).

Professional Experience

2018 - 2019

Geophysical marine surveyor, data processor (multibeam echosounder), and cartographer at SEA WORK SURVEY (SWS) EST, Tehran, Iran.

Geophysical surveying . Multibeam echosounder data processing . Seafloor mapping and cartography . Navigating drilling rigs . Debris removal . Writing Daily Progress Reports (DPRs) . Writing industry proposals

2015 - 2017

Researcher and instructor at Hydrography and Tidal Affairs, National Cartographic Centre of Iran (NCC).

Skills: Satellite Altimetry · Tidal modelling · Oceanography · Geostrophic Currents · Bathymetry

Publications: <https://saeid-aminjafari.github.io/publications>

1. Jaramillo, F., **Aminjafari, S.**, Castellazzi, P., et al., **2024**. The Potential of Hydrogeodesy to Address Water-Related and Sustainability Challenges. *Water Resources Research*, 60(11), e2023WR037020. <https://doi.org/10.1029/2023WR037020>
2. **Aminjafari, S.**, Frappart, F., Papa, F., Brown, I., and Jaramillo, F., **2024**. Enhancing the Temporal Resolution of Water Levels from Altimetry Using D-InSAR: A Case Study of 10 Swedish Lakes. *Science of Remote Sensing*, 10, 100162. <https://doi.org/10.1016/j.srs.2024.100162>
3. **Aminjafari, S.**, Brown, I., and Jaramillo, F., **2024**. Evaluating D-InSAR Performance to Detect Small Water Level Fluctuations in Two Small Lakes in Sweden. *Environmental Research Communications*, 6, 091006. <https://doi.org/10.1088/2515-7620/ad7701>
4. **Aminjafari, S.**, Brown, I., Frappart, F., Papa, F., Blarel F., Vahidi Mayamey, F., and Jaramillo, F., **2024**. Distinctive Patterns of Water Level Change in Swedish Lakes Driven by Climate and Human Regulation. *Water Resources Research*, 60(3), e2023WR036160. <https://doi.org/10.1029/2023WR036160>
5. **Aminjafari, S.**, Brown, I., Vahidi Mayamey, F., and Jaramillo, F., **2024**. Tracking Centimeter-Scale Water Level Changes in Swedish Lakes Using D-InSAR. *Water Resources Research*, 60(2), e2022WR034290. <https://doi.org/10.1029/2022WR034290>
6. **Aminjafari, S.**, Brown, I., Chalov, S., Simard, M., Lane, C.R., Jarsjö, J., Darvishi, M. and Jaramillo, F., **2021**. Drivers and extent of surface water occurrence in the Selenga River Delta, Russia. *Journal of Hydrology: Regional Studies*, 38, p.100945. <https://doi.org/10.1016/j.ejrh.2021.100945>
7. Darvishi, M., Destouni, G., **Aminjafari, S.** and Jaramillo, F., **2021**. Multi-Sensor InSAR Assessment of Ground Deformations around Lake Mead and Its Relation to Water Level Changes. *Remote Sensing*, 13(3), p.406. <https://doi.org/10.3390/rs13030406>
8. Liu, D., Wang, X., **Aminjafari, S.**, Yang, W., Cui, B., Yan, S., Zhang, Y., Zhu, J. and Jaramillo, F., **2020**. Using InSAR to identify hydrological connectivity and barriers in a highly fragmented wetland. *Hydrological Processes*, 34(23), pp.4417-4430. <https://doi.org/10.1002/hyp.13899>
9. Soltanpour, A., Pirooznia, M., **Aminjafari, S.** and Zareian, P., **2018**. Persian Gulf and Oman sea tide modeling using satellite altimetry and tide gauge data (TM-IR01). *Marine Georesources & Geotechnology*, 36(6), pp.677-687. <https://doi.org/10.1080/1064119X.2017.1366608>

10. **Aminjafari, S., 2017.** Monitoring of Masjed-Soleiman embankment dam's deformation using a combination of Interferometric Synthetic Aperture Radar (InSAR) and finite element modeling. *Geodesy and Cartography*, 43(1), pp.14-21. <https://doi.org/10.3846/20296991.2017.1299842>

Reviewer for Journals

2023-2024	AGU - Water Resources Research (3), Geophysical Research Letters (1), Earth and Space Science (1)
2023	Elsevier - Advances in Water Resources (1)
2023	IEEE - Geoscience and Remote Sensing Letters (1)
2022	Elsevier - Journal of Hydrology: Regional Studies (1)
2021	Elsevier - Science of the Total Environment (1)

Grants

Travel grant: Donation scholarship, 600 €
Bolin Centre Seed-money Research Grant, 5000 €
Alice Wallenbergs Stipendship 600 €
Bolin Centre conference participation grant, 1000 €

References

It will be sent gladly upon request.