

# SAEED SOLTANI

## GEOPHYSICIST



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## About Me

I am Saeed Soltani. Last year PhD student at the Universite Grenoble Alpes (ISTERRE). My research focuses on 3D modeling of sedimentary basins and their impact on seismic risk assessment. I have extensive experience in constructing experimental 3D velocity models by integrating various passive and active geophysical methods, as well as strong seismic ground motion simulations using the spectral-element method.

## Experience

### IIEES 2016 - now

Research assistant

Selected projects:

- The 12 November 2017 Mw 7.3 Sarpol-zahab earthquake reconnaissance report, Vol.2, Site effects, IIEES, Tehran, Iran.
- Assessing local seismic hazards and loess soil susceptibility in Aq-Qala and Gomishan (Golestan province, Iran).
- Land subsidence in Faraghi city (Golestan province, Iran): A study on soil erosion and natural hazard risks.
- Assessing landslide risks and site effects in Kalpoosh village, East Alborz region: A study for resettlement and mitigation measures.
- Soil characterization for seismic stations in Lorestan province using ambient noise vibrations methods.
- Assessing seismic vulnerability and site effects for oil and gas facilities in Mahshahr Special Economic Zone, Southern Iran

### More information at:

<https://www.saeedsoltani.com/project/sitecharacter/>

## Education

**2023**

Universite Grenoble Alpes / IIEES

**PhD**

3D velocity model and surface ground motion simulation in the Tehran sedimentary basin  
<https://www.theses.fr/s212521>

**2015**

IIEES\*

**MSc**

Thesis : Velocity structure imaging by inversions of Rayleigh wave ellipticity: Application to the Arak city

**2012**

Mazandaran University

**BSc**

IIEES: International Institute of Earthquake Engineering and Seismology, Tehran, Iran

## Expertise

- Ambient noise techniques
- Array processing
- Numerical simulation

## Software

- Geopsy
- EFISPEC 3D
- SAC

## Visualization

- QGIS
- Adobe Illustrator
- GMT
- Paraview\*

\*basic

## Language

Persian	Native
English	B2
French	A2/B1
Turkish	A1

## Programming language and OS

Python      Linux

## **PUBLICATIONS:**

1. Saeed Soltani, Ebrahim Haghshenas, Bertrand Guillier, Cecile Cornou (2023). Journal Paper. 3D shear-wave velocity model of Tehran's (Iran) sedimentary basin by means of geological and geophysical data. **(Submitted, under review)**
2. Saeed Soltani, Ebrahim Haghshenas (2023). Conference Proceedings. Site specific seismic hazard analysis for central Alborz basin. IUGG2023. Berlin, Germany. **Poster presentation**
3. Saeed Soltani, Cecile Cornou, Bertrand Guillier, Ebrahim Haghshenas (2023). Conference Proceedings. Simulations of ground motion in the Tehran basin based on newly developed 3D velocity model. EGU2023. Vienna, Austria. **Oral presentation.**
4. Saeed Soltani, Ebrahim Haghshenas, Bertrand Guillier, Cecile Cornou (2021). Conference Proceedings. 3D velocity model of Tehran. 37th General Assembly (GA) of the European Seismological Commission. Athens, Greece. **Oral presentation.**
5. Saeed Soltani, Ebrahim Haghshenas, Gholam Doloei (2021). Journal Paper. On the Optimal Parametrization of Initial Models in Surface Wave Inversion in Deep Basins. Journal of Research on Applied Geophysics (JRAG). DOI:10.22044/jrag.2021.9249.1272
6. Saeed Soltani, Ebrahim Haghshenas, Gholam Doloei (2020). Conference proceedings. Evaluation of Site Effect Study Techniques in the Temporary Seismic Network of Lorestan. 19th Iranian geophysics conference, Tehran, Iran. **Oral presentation**
7. Saeed Soltani, Ebrahim Haghshenas (2019). The efficiency of using three component array-based ellipticity methods for site characterization. 8th International Conference on Seismology and Earthquake Engineering (SEE8), Tehran, Iran.
8. Saeed Soltani, Ebrahim Haghshenas (2019). Conference Proceedings. 2/3D site effect studies in big cities of Iran; needs and challenges. 8th International Conference on Seismology and Earthquake Engineering (SEE8), Tehran, Iran. **Oral presentation.**
9. Saeed Soltani, Ebrahim Haghshenas (2018). Conference Proceedings. A study between the relations of Caspian Sea wave height and the low frequency Seismic noise measurements in Tehran. 16th European conference on earthquake engineering, Thessaloniki, Greece.
10. Saeed Soltani, Ebrahim Haghshenas, Mohsen Fazlavi (2015). Conference Proceedings. Velocity structure imaging by inversions of Rayleigh wave ellipticity Application to the Arak city, Iran. 7th International Conference on Seismology and Earthquake Engineering (SEE7), Tehran, Iran. **Oral presentation – Best paper.**

## Fundings:

- The Scholarship BGF (Bourses du Gouvernement Français) (2018-19).
  - The Forty Five days funding for scientific visit, TRIGGER project (The collaboration between Iran and France universities in field of Geology/Geodynamics, Earthquakes and Mineral resources, 2017). Grenoble, France.
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## Workshops:

- Ambient vibration techniques for site characterization + Workshop on recent advanced techniques for site characterization. March 2019, L'aquila, Italy.
  - Seismology and earthquake engineering research infrastructure alliance for European project (SERA
  - - EU NA5 "Networking databases of site and station characterization"). March 2019, L'aquila, Italy.
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## Teaching experience:

Three one-week courses at University of Tehran, emphasizing the use of Geopsy software for site characterization and seismic microzonation using ambient vibration techniques in 2018,2019,2020.

## Supervising Master Thesis:

Mrs Faezeh Amirian (University of Tehran; Summer 2022)

**Thesis title:** Determining of shear wave velocity in Dargahan region (Qeshm) using "RayDec" and "HVTFA" technique

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## Current personal projects:

**RayDecC:** Using the Random Decrement Technique concepts to extract ellipticity information for site characterization with earthquake coda (Main idea from M. Hobiger and C. Cornou.)

**CentralAlborzModel (CAM):** Extending the current model and simulation of the Tehran basin to the Central Alborz basin. The most populous region in Iran, home to over 15 million people.

## References

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