Curriculum Vitae

Ha Vinh Long, Ph.D.

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Institute of Earth Sciences, Academia Sinica. 128, Section 2, Academia Road, Nangang, Taipei 11529, Taiwan.

Institute of Earth Sciences, Vietnam Academy of Science and Technology. 18, Hoang Quoc Viet Road, Hanoi 122100, Vietnam. (*Scientific association*)

Research Interests:

1. Seismic structure imaging: body-wave tomography, coda wave tomography, joint-inversion of multiple data types.

2. Seismic hazard assessment: catalog statistic, Site condition assessment, urban hazard planning

3. Timeseries analysis: waveform filtering, event detection, spectral analysis, ground motion variation, and ambient noise studies.

4. Machine learning for seismology: Deep-learning-based methods in analyzing seismic waveforms and making seismic catalog.

5. Distributed Acoustic Sensing (DAS): Near-surface imaging and fault zone characterization, seismic monitoring, empirical relationship with broadband seismic data.

6. Earthquake early warning (EEW): Experiments on the network architecture and methodologies for an earthquake early warning system (in Vietnam).

Working experience:

2025/06	Postdoctoral fellow, Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan
2012/09-2013/04	Tsunami Watchstander, Regional Integrated Multi-Hazard Early Warning System for Africa and Asia, Asian Institute of Technology, Thailand (under secondment)
2010 - 2018	Researcher, Earthquake monitoring department, Institute of Geophysics, VAST, Vietnam

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Education:

	Doctor of Philosophy, Taiwan International Graduate Program - Earth System Science, National Central University and Institute of Earth Sciences – Academia Sinica
2025	Thesis: *Imaging multi-scale velocity structure of northern Vietnam using the integrated seismic network and linear array* Advisors: Prof. Dr. Hsin-Hua Huang; Prof. Dr. Bor-Shouh Huang; Prof. Dr. Chung-Han Chan
	Master, Faculty of Physic – Hanoi University of Science, Vietnam National University, Hanoi, Vietnam
2015	Thesis: *Stochastic simulation of strong ground motion time series* (in Vietnamese) Advisor: Dr. Le-Minh Nguyen
	Bachelor, Faculty of Physic – Hanoi University of Science, Vietnam National University, Hanoi, Vietnam
2011	Thesis: *Study of geoelectrical structures using low-frequency electromagnetic induction on physical models* (in Vietnamese) Advisors: Dr. Duc-Tan, Nguyen

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Publications:

**** On-going Manuscripts:***

Vinh Long Ha*, Hsin-Hua Huang*, Kuan-Fu Feng, Yun-Ze Cheng, Bor-Shouh Huang, Le-Minh Nguyen, Van-Duong Nguyen (2025). High-resolution crustal imaging across the Red River Shear Zone, Northern Vietnam using Markov-Chain Monte-Carlo Joint Inversion with Multiple Seismic Data Types, *manuscript in preparation.*

Le Minh Nguyen, Van-Bang Phung*, **Vinh-Long Ha**, Thi-Giang Ha, Van-Duong Nguyen, Bor-Shouh Huang (2026). Evaluation of local magnitude (M_L) for Northern Vietnam, *manuscript in preparation.*

**** Published:***

1. Van-Duong Nguyen, Le-Minh Nguyen*, Cong-Nghia Nguyen, Thi-Giang Ha, **Vinh-Long Ha**, Tien-Hung Nguyen, Quang-Khoi Le, 2025. Unveiling the seismic attenuation characteristics in the mantle beneath Southeast Asia: Insights into mantle dynamics and tectonic processes, Regional Studies in Marine Science, Volume 86, 104192, ISSN 2352-4855, https://doi.org/10.1016/j.rsma.2025.104192

2. Phung, V. B., Huang, B-S*, Nguyen, C.N., Nguyen, V.D., Nguyen, L.M, Nguyen, A.D., Le, Q.K., Pham, T.T., Ha, T.G., Dinh, Q.V., **Ha, V.L.**, Lavrentiadis, G., Chan, C.H., Pham, D.H, 2024. Evaluation of ground motion models for Northern Vietnam based on ground motion records of the 2020 Mw5.0 Moc-Chau earthquake sequence. *Earthquake Spectra*. 2024;41(1):876-907. doi:10.1177/87552930241285177

3. **Vinh Long Ha***, Hsin-Hua Huang*, Bor-Shouh Huang, Le Minh Nguyen, Van Duong Nguyen, Thi Giang Ha, Quang Khoi Le, Quoc Van Dinh, Tu Son Le, Tien Hung Nguyen, Cong Nghia Nguyen, Kyle Ken Smith, Thuy Thanh Pham, 2024. Geotectonic architecture beneath Northern Vietnam revealed by local earthquake tomography combining seismic data from multiple networks, Tectonophysics, Volume 884, 230402, ISSN 0040-1951, https://doi.org/10.1016/j.tecto.2024.230402

4. Phung, V.-B.*, Y.-W. Chang, C.-H. Loh, B.-S. Huang, **V.-L. Ha**, C.-N. Nguyen, and D.-H. Pham (2024), Regional and Site-Specific Ground Motion Model for Probabilistic Seismic Hazard Analysis in Taiwan: A Case Study of I-Lan, Journal of Earthquake and Tsunami, 18(04), 2450009, doi:10.1142/s179343112450009x

5. Cong Nghia Nguyen, Van Duong Nguyen, Le Minh Nguyen, Van Bang Phung, Bor-Shouh Huang*, Nguyen Anh Duong, Quang Khoi Le, Thi Giang Ha, Dinh Quoc Van, **Ha Vinh Long**, Po-Fei Chen, 2022. Characteristics of earthquake source and ground motions in Northern Vietnam investigated through the 2020 Moc Chau M5.0 earthquake sequence, Journal of Asian Earth Sciences, Volume 229, 2022, 105144, ISSN 1367-9120, https://doi.org/10.1016/j.jseaes.2022.105144

6. Cao Dinh Trieu*, Cao Dinh Trong, Le Van Dung, Thai Anh Tuan, Dinh Quoc Van, **Ha Vinh Long**. Triggered Earthquake Study in Tranh River No. 2 (Vietnam) Hydropower Reservoir, Journal of the Geological Society of India 84(3):319-325 (2014) DOI: 10.1007/s12594-014-0135-x

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Conference presentations:

1. **Vinh-Long Ha***, Hsin-Hua Huang, Kuan-Fu Feng, Yun-Ze Cheng, Bor-Shouh Huang, Le-Minh Nguyen, Van-Duong Nguyen, Tu-Son Le, Tien-Hung Ha, Thi-Giang Ha, An-Nguyen Tran, Quang-Khoi Le, 2025. Broadband seismic observations and imaging of the crust and uppermost mantle beneath Northern Vietnam. JpGU meeting 2025, Japan. (oral).

2. **Vinh Long Ha***, Hsin-Hua Huang, Kuan-Fu Feng, Yun-Ze Cheng, Bor-Shouh Huang, Le-Minh Nguyen, Van-Duong Nguyen. High-resolution crustal imaging across the Red River Shear Zone, Northern Vietnam using Markov-Chain Monte-Carlo Joint Inversion with Multiple Seismic Data Types. iVCEES2024, Vietnam. (oral).

3. Bor-Shouh Huang, Tu Son Le, Kuo-Lian Wen, Van Toan Dinh, Le Minh Nguyen, Van Duong Nguyen, Cong Nghia Nguyen, Van Bang Phung, **Vinh Long Ha**. Seismic broadband observations and earthquake hazard assessments in Vietnam – the twenty years earth science cooperation from Taiwan. iVCEES2024, Vietnam.

4. Nguyen Le Minh, Tran An Nguyen*, **Ha Vinh Long.** The experiment of a near-real-time shakemap using ground motion prediction equations for an earthquake early warning system: The case study of the M5.0 event in the Kontum Province. iVCEES2024, Vietnam. (oral).

5. Nguyen Le Minh*, Tran An Nguyen, **Ha Vinh Long**, Nguyen Tien Hung, Vi Van Vung. An introduction to earthquake rapid information system for local and regional scales in Vietnam: Two commissioning test systems in Kon Tum Province and northwestern Vietnam. iVCEES2024, Vietnam. (oral).

6. **Ha Vinh Long***, Hsin-Hua Huang, Le Minh Nguyen, Van Duong Nguyen, Quang Khoi Le, Thi Giang Ha, Dinh Quoc Van, Bor-Shouh Huang, Tu Son Le, Tien Hung Nguyen. Unveiling geological characteristics beneath Northern Vietnam through Traveltime Tomography. iVCEES2023, Vietnam. (oral).

7. Bang V. Phung*, Bor S. Huang, Minh L. Nguyen, Duong V. Nguyen , Cong Nghia Nguyen , **Ha Vinh Long.** Toward the seismic hazard assessment of the stable continental region from the strong-motion data recorded of a significant earthquake: Example for Northern Vietnam. 8th ACEES2022, Taiwan. (oral).

8. **Ha Vinh Long***, Hsin-Hua Huang, Le Minh Nguyen, Van Duong Nguyen, Quang Khoi Le, Thi Giang Ha, Dinh Quoc Van, Bor-Shouh Huang, Tu Son Le. Three-dimensional crustal velocity structures in Northern Indochina from multiple seismic datasets. Taiwan Geosciences Assembly 2021. (poster).

9. **Long, H. V*.**, Huang, H.-H., Nguyen, L. M., Nguyen, V. D., Le, Q. K., Ha, T. G., Van, D. Q., Huang, B.-S., and Le, T. S.: Crustal seismic structure of Red-River shear zone and surrounding area, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-2001, https://doi.org/10.5194/egusphere-egu21-2001, 2021. (poster).

**** On-going presentations:***

1. Chi-Hsian Wang, Hsin-Hua Huang, **Vinh Long Ha**, Po-Fei Chen , Chin-Shang Ku. High-resolution imaging of the Shanchiao Fault and basin structures in Taipei metropolis using dark-fiber distributed acoustic sensing. Taiwan Geosciences Assembly 2025. (poster).

Grants and awards:

1. Academia Sinica, 2024 AS-TIGP Research Performance Fellowship.

Program languages/ ultilities:

- Programming Languages: Python, MATLAB, Bash, Fortran, R, C++
- Scientific Utilities: ObsPy, PyGMT, Matplotlib, Linux/Unix shell scripting, LaTeX, Git/GitHub, Jupyter Notebook
- Seismological Software: SAC, SEISAN, SAC, SeisComP3