



Hsin-Ying Yang 楊欣穎

[hsinyingtw@gmail.com](mailto:hsinyingtw@gmail.com)

## RESEARCH INTERESTS

- Normal mode theory and its applications
- Seismic Tomography

## EDUCATION

- Ph.D. Geosciences, National Taiwan University, Taipei, Taiwan 2012  
Thesis: Wavelet-based surface wave tomography in southern Taiwan, under the supervision of *Zhao Li* and *Shu-Huei Hung*
- M.S. Geosciences, National Taiwan University, Taipei, Taiwan 2005  
Thesis: Validation of ray and wave theoretical travel times in heterogeneous random media, under the supervision of *Shu-Huei Hung*
- B.S. Geosciences, National Taiwan University, Taipei, Taiwan 2003

## RESEARCH EXPERIENCE

- National Taiwan University, Taiwan 2021.02-2021.10  
Temporary field assistant for deploying broadband seismometers
- University of Science and Technology of China, China 2017.11-2020.10  
Assistant Research Fellow
- Chinese Academy of Sciences, China 2015.11-2017.10  
Young Taiwanese Visiting Scholar
- National Taiwan University, Taiwan 2014.06-2015.07  
Postdoctoral Research Fellow
- Princeton University, USA 2013.04-2014.03  
Visiting Postdoctoral Scholar, in collaboration with Jeroen Tromp
- National Taiwan University, Taiwan 2012.08-2013.03  
Postdoctoral Research Fellow

## PROFESSIONAL SERVICES

Reviewers in scientific journals (*Geophysical Journal International*, *Journal of Earth Science*, *Geodesy and Geodynamics*)

## TEACHING EXPERIENCE

School of Earth and Space Sciences, USTC, China 2018  
 “Quantitative Seismology” with Li Zhao (main coordinator)

Department of Geosciences, NTU, Taiwan  
 Teaching Assistant of the courses “Introduction to Geophysics” and “Geodynamics”

## HONORS AND AWARDS

- Honorary Membership, the Phi Tau Phi scholastic honor society of the Republic of China (2012)
- Student Poster Award, Conference of Chinese Geophysical Society, Taiwan (2004, 2008, 2012)
- Dean’s Award, College of Science, NTU (2003, 2005, 2012)

## PUBLICATIONS

### ● published journal articles

1. Hu, S., Yao, H., **Yang, H.-Y.**, 2021. The azimuthal dependence of Rayleigh wave ellipticity in a slightly anisotropic medium. *Geophysical Journal International* 225, 1359–1374. <https://doi.org/10.1093/gji/ggab029>
2. 于雯, 楊欣穎\*, 喻靜, 孫道遠, 2021. 呼圖壁氣相數據中面波震幅變化研究. *地震研究* 44, 22–44.
3. Sun, D., Helmberger, D., Lai, V.H., Gurnis, M., Jackson, J.M., **Yang, H. -Y.**, 2019. Slab Control on the Northeastern Edge of the Mid-Pacific LLSVP Near Hawaii. *Geophysical Research Letter* 46, 3142–3152. <https://doi.org/10.1029/2018GL081130>
4. Liu, C., Yao, H.\*, **Yang, H.\***, Shen, W., Fang, H., Hu, S., Qiao, L., 2019. Direct Inversion for Three-Dimensional Shear Wave Speed Azimuthal Anisotropy Based on Surface Wave Ray Tracing: Methodology and Application to Yunnan, Southwest China. *Journal of Geophysical Research: Solid Earth* 124, 2018JB016920. <https://doi.org/10.1029/2018JB016920>
5. Zhang, Y., Yao, H., **Yang, H.-Y.**, Cai, H.-T., Fang, H., Xu, J., Jin, X., Kuo-Chen, H., Liang, W.-T., Chen, K.-X., 2018. 3-D Crustal Shear-Wave Velocity Structure of the Taiwan Strait and Fujian, SE China, Revealed by Ambient Noise Tomography. *Journal of Geophysical Research: Solid Earth* 123, 8016–8031. <https://doi.org/10.1029/2018JB015938>
6. Lau, H.C.P., Mitrovica, J.X., Davis, J.L., Tromp, J., **Yang, H.-Y.**, Al-Attar, D., 2017. Tidal tomography constrains Earth’s deep-mantle buoyancy. *Nature* 551, 321–326. <https://doi.org/10.1038/nature24452>

7. **Yang, H.-Y.\***, Tromp, J., 2015. Synthetic free-oscillation spectra: an appraisal of various mode-coupling methods. *Geophysical Journal International* 203, 1179–1192. <https://doi.org/10.1093/gji/ggv349>
8. Lau, H.C.P., **Yang, H.-Y.**, Tromp, J., Mitrovica, J.X., Letychev, K., Al-Attar, D., 2015. A normal mode treatment of semi-diurnal body tides on an aspherical, rotating and anelastic Earth. *Geophysical Journal International* 202, 1392–1406. <https://doi.org/10.1093/gji/ggv227>
9. Lee, T.-P., Chia, Y., **Yang, H.-Y.**, Liu, C.-Y., Chiu, Y.-C., 2012. Groundwater Level Changes in Taiwan Caused by The Wenchuan Earthquake on 12 May 2008. *Pure and Applied Geophysics* 169, 1947–1962. <https://doi.org/10.1007/s00024-012-0464-x>
10. Wan, N.-J., Li, H.-C., Liu, Z.-Q., **Yang, H.-Y.**, Yuan, D.-X., Chen, Y.-H., 2011. Spatial variations of monsoonal rain in eastern China: Instrumental, historic and speleothem records. *Journal of Asian Earth Sciences* 40, 1139–1150. <https://doi.org/10.1016/j.jseaes.2010.10.003>
11. **Yang, H.-Y.\***, Zhao, L., Hung, S.-H., 2010. Synthetic seismograms by normal-mode summation: a new derivation and numerical examples: Normal-mode synthetic seismograms. *Geophysical Journal International* 183, 1613–1632. <https://doi.org/10.1111/j.1365-246X.2010.04820.x>
12. **Yang, H.-Y.**, Hung, S.-H., 2005. Validation of ray and wave theoretical travel times in heterogeneous random media. *Geophysical Research Letter* 32. <https://doi.org/10.1029/2005GL023501>

● Journal articles in preparation

1. Zeng, S., **Yang, H.-Y.\***, Tromp, J., Shen, W.-B., Zhao, L., 2022. ModeNet: Window selection in frequency domain for normal mode measurement based on machine learning
2. **Yang, H.-Y.\***, Patty P.-Y. Lin, D. Sun, H. Yao, 2022. Theoretical calculation of lunar free oscillations.

● Recent conference papers

1. Zeng, S., **Yang, H.-Y.**, Tromp, J., Zhao, L., 2021. Using machine learning to select frequency windows on the normal-mode spectra. American Geophysical Union Fall meeting, IN14B-05.
2. Zhu, Q., **Yang, H.-Y.**, Wang, Y., Huang, B.-S., Zhao, L., 2021. Short-period Teleseismic Full-waveform Tomography for the Lithospheric Structure in Southern Taiwan. American Geophysical Union Fall meeting, S22B-07.
3. **Yang, H.-Y.**, Sun, D., Lin, P.-Y., Yao, H.-J., 2019. Theoretical calculation of lunar free oscillations. Annual Meeting of Chinese Geoscience Union.

4. **Yang, H.-Y.**, Zhao., L., Hung, S.-H., Huang, B.-S., Chang, Y.-H., 2016. Wavelet-based surface-wave tomography: measurement and inversion. Annual Meeting of Chinese Geoscience Union. (Invited Talk).