

## Hsin Tung 童忻



### CONTACT INFORMATION

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### EDUCATION

**National Taiwan University**, Taipei, Taiwan, R.O.C.  
*Department of Geosciences, Ph.D., August/2019*  
GPA: 3.85/4

**National Taiwan University**, Taipei, Taiwan, R.O.C.  
*Department of Geosciences, M.S., July/2008*  
GPA: 4.0/4      Rank: 1/13

**National Chung Cheng University**, Chia-Yi, Taiwan, R.O.C.  
*Department of Earth and Environmental Sciences, B.S., June/2006*  
GPA: 3.42/4      Rank: 7/38

### WORK & ACADEMIC EXPERIENCE

**Academia Sinica, Institute of Earth Sciences**, Taipei, Taiwan, R.O.C.

Research Assistant, August/2008-present

Participated in research team led by Dr. Horng-Yue Chen

I investigate crustal deformation pattern along the southern Longitudinal Valley Fault (LVF), an extremely active inverse fault considered as a collision boundary between the Eurasian and the Philippine Sea plates, by using SAR interferometry, GPS and precise leveling data.

**National Taiwan University, Department of Geosciences**, Taipei, Taiwan, R.O.C.

Ph.D. student/Research Assistant, February/2014-August/2019

Participated in research team led by Dr. Jyr-Ching Hu; laboratory of geodesy and remote sensing. <http://www.gl.ntu.edu.tw/geodesy/>

**Kainan University, Department of Information management**, Taoyuan, Taiwan, R.O.C.

Research Assistant, August/2008-March/2009

Participated in research team led by Dr. Pu-Huai Chen

In this project, I focus on land subsidence from 1996 to 2000 in Yunlin area. Due to the dense vegetation, it is hard to get the time series distribution of land deformation by using conventional DInSAR technique. For that reason, I used the stacking DInSAR and PSInSAR technique to complete the deformation variations.

**National Cheng Kung University, Tainan Hydraulics Laboratory**, Tainan, Taiwan, R.O.C.

Research Assistant, December/2006-December/2008

Participated in research team led by Dr. Chung-Hong Song

I handled the ordering and scheme of all the images; processed and analyzed temporal and spatial variations of land subsidence from 1996 to 2000 in Taiwan by conventional DInSAR.

**National Taiwan University, Department of Geosciences**, Taipei, Taiwan, R.O.C.

Graduate student/Research Assistant, September/2006-July/2008.

Participated in research team led by Dr. Jyr-Ching Hu; laboratory of geodesy and

remote sensing. <http://www.gl.ntu.edu.tw/geodesy/>

**National Taiwan University**, *Department of Geosciences*, Taipei, Taiwan, R.O.C.  
Teaching Assistant, “Introduction of Remote Sensing”,  
course taught by Dr. Jyr-Ching Hu

**National Taiwan University**, *Department of Geosciences*, Taipei, Taiwan, R.O.C.  
Teaching Assistant, “Introduction to field geology II”,  
course taught by Dr. Jyr-Ching Hu

**National Chung Cheng University**, *Department of Earth and Environmental Sciences*, Chia-yi, Taiwan, R.O.C.  
Teaching Assistant, “The Knowledge of Oceans”,  
course taught by Dr. Yu-shieh Ma

**National Chung Cheng University**, *Department of Earth and Environmental Sciences*, Chia-yi, Taiwan, R.O.C.  
Participated in research team led by Dr. Chau-Huei Chen; Laboratory of Seismic data Analysis. <http://www.eq.ccu.edu.tw/~lab408/>

**GRADUATE COURSEWORK**

Computer programming	Geophysics
Radar remote sensing	Introduction of remote sensing
The seismological observatory	Structural Geology
Engineering Mathematics	Probability and Statistics in Geosciences

**SPECIAL SKILL**

Linux	MATLAB	FORTRAN
GMT	ArcGIS	CorelDRAW
Microsoft Office	Dreamweaver	PCI Geomatica
Diapason	ROI-PAC	StaMPS
ISCE	FRAM-SBAS	Doris

**AWARDS**

The 3rd place award of presentation, The 16 <sup>th</sup> Young Scientist Forum	2008
Link Earth Technology Co. Scholarship	2005
Presidential Award, <i>Department of Earth and Environmental Sciences</i> , National Chung Cheng University	2004
Scholarship funded by Chinese Geophysical Society	2003

**PUBLICATION**

**Tung, H.**, Chen, H.-Y., Hsu, Y.-J., Hu, J.-C., Chang, Y.-H. and Kuo, Y.-T., 2019. Triggered slip on multifaults after the 2018 Mw 6.4 Hualien earthquake by continuous GPS and InSAR measurements. *Terr. Atmos. Ocean. Sci.*, 30, 285-300, doi: 10.3319/TAO.2019.04.03.01.

Kuo, Y.-T., Wang, Y., Hollingsworth, J., Huang, S.-Y., Chuang, Ray Y., Lu, C.-H., Hsu, Y.-C., **Tung, H.**, Yen, J.-Y. and Chang, C.-P., 2018. Shallow Fault Rupture of the Milun Fault in the 2018 Mw 6.4 Hualien Earthquake: A High-Resolution Approach from Optical Correlation of Pléiades Satellite Imagery. *Seismological Research Letters*, 90 (1): 97–107, doi: 10.1785/0220180227.

Yang, Y.-H., Hu, J.-C., **Tung, H.**, Tsai, M.-C., Chen, Q., Xu, Q., Zhang, Y.-J., Zhao, J.-J., Liu, G.-X., Xiong, J.-N., Wang, J.-Y., Yu, B., Chiu, C.-Y. and Su, Z., 2018. Co-Seismic and Postseismic Fault Models of the 2018 Mw 6.4 Hualien Earthquake Occurred in the Junction of Collision and Subduction Boundaries Offshore Eastern Taiwan. *Remote Sens.*10(9), 1372, doi: 10.3390/rs10091372.

Kuo, Y.-T., Ku, C.-S., Chen, Y.-G., Wang, Y., Lin, Y.N.N., Chuang, R.-Y., Hsu, Y.-J., Taylor, F.-W., Huang, B.-S. and **Tung, H.**, 2016. Characteristics on fault coupling along the Solomon megathrust based on GPS observations from 2011 to 2014. *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL070188.

Huang, M.-H., **Tung, H.**, Fielding, E., Huang, H.-H., Liang, C. Huang C. and Hu, J.-C., 2016. Multiple fault slip triggered above the 2016  $M_w$  6.4 MeiNong earthquake in Taiwan. *Geophys. Res. Lett.*, 43, 7459-7467, doi: 10.1002/2016GL069351.

**Tung, H.**, Chen, H.-Y., Hu, J.-C., Ching, K.-E., Chen, H. and Yang, K.-H., 2016. Transient deformation induced by groundwater change in Taipei metropolitan area revealed by high resolution X-band SAR interferometry. *Tectonophysics*, 692, 265-277, doi: 10.1016/j.tecto.2016.03.030.

Chen, H.-Y., Kuo, L.-C., Lee, J.-C., **Tung, H.**, Su, S.-H., Yao, S.-S. and Lee, H., 2015. Reducing distance dependent bias in low-cost single frequency GPS network to complement dual frequency GPS stations in order to derive detailed surface deformation field. *Surv. Rev.*, 47(340), 7-17, doi: 10.1179/1752270614Y.0000000095.

Wu, Y.-Y., Hu, J.-C., Lin, G.-P., Chang, C.-P., **Tung, H.**, and Lu, C.-H., 2013. Transient active deformation in Tainan tableland using persistent scatterers SAR interferometry. *Bull. Soc. Geol. France*, 184(4-5), 441-450, doi: 10.2113/gssgfbull.184.4-5.441.

Chen, H.-Y., Lee, J.-C., **Tung, H.**, Yu, S.-B., Hsu, Y.-J., and Lee, H., 2013. A new velocity field from a dense GPS array in the southernmost Longitudinal Valley, southeastern Taiwan. *Terr. Atmos. Ocean. Sci.*, 24(5), 837-862, doi: 10.3319/TAO.2013.06.18.01(T).

**Tung H.** and Hu, J.-C., 2012. Assessments of serious anthropogenic land subsidence in Yunlin County of central Taiwan from 1996 to 1999 by Persistent Scatterers InSAR. *Tectonophysics*, 578, 126-135, doi:10.1016/j.tecto.2012.08.009.

**Tung, H.**, Hsieh, C.-S. and Hu, J.-C., 2012. Detecting terrain deformation in southern Taiwan with persistent scatterer radar interferometry. *Special Publication of the Central Geological Survey, MOEA*, 26, 1-15. (in Chinese)

Chen, H.-Y., Lee, J.-C., **Tung, H.**, Yu, S.-B., Hsu, Y.-J. and Lee, H., 2012. Determination of vertical velocity field of southernmost Longitudinal Valley in eastern Taiwan: A joint analysis of leveling and GPS measurements. *Terr. Atmos. Ocean. Sci.*, 23(4), doi:10.3319/TAO.2012.02.29.01.

Chen, H.-Y. Yu, S.-B., **Tung, H.**, Tsujii, T. and Ando, M., 2011. GPS medium-range kinematic positioning for the seafloor geodesy off eastern Taiwan. *Eng. J.*, 15(1), 17-24, doi:10.4186/ej.2011.15.1.17.

Hsieh, C.-S., Shih, T.-Y., Hu, J.-C., **Tung, H.**, Huang, M.-H., Angelier, J., 2011. Using differential SAR interferometry to map land subsidence: A case study in the Pingtung Plain of SW Taiwan. *Nat. Hazards*, 58, 1311-1332.

**Tung, H.**, 2008. Analysis of surface deformation based on PS-InSAR technique: Case studies in coastal plain, SW Taiwan. *M.S. Thesis*, National Taiwan University, Taipei, Taiwan, R.O.C.

**CONFERENCE**

**Tung H.** and Chen, H.Y. (2018), "Instant GPS analysis platform established for GPS data processing and observation results sharing ", AGU Fall *Meeting 2018*, Washington, D.C. USA, G51D-0507.

**Tung H.**, Chen, H.Y., Hu, J.C. and Hsu Y. J. (2018), "Coseismic displacements and ground motion recorded by GNSS and DInSAR data on Feb. 6, 2018 Hualien earthquake, Taiwan ", Taiwan Geosciences Assembly, Chaoyi, Taiwan.

**Tung H.**, Chen, H.Y., Hsu Y. J. and Hu, J.C. (2016), "Coseismic deformation of the 2016 Meinong earthquake revealed from GNSS and InSAR data", Taiwan Geosciences Assembly, Taipei, Taiwan.

**Tung H.**, Chen, H.Y. and Hu, J.C. (2014), "Analysis of ground displacements in Taipei area by using high resolution X-band SAR interferometry", AGU Fall *Meeting 2014*, San Francisco, CA, USA, G31A-0395.

**Tung H.**, Chen, H.Y., Yen, J.Y. and Chen, C.P. (2013), "Surface Deformation Analysis of Active Faults revealed by PSInSAR observations and Geodetic Data in Southern Part of the Taitung Longitudinal Valley, Eastern Taiwan", *Asia Oceania Geosciences Society 2013*, Brisbane, Australia, SE01-23-24-A002.

**Tung H.**, Chen, H.Y., Lee, J.C. and Yen, J.Y. (2011), "Utilize InSAR technique to determine the vertical inter-seismic displacement in southeastern Taiwan", AGU Fall *Meeting 2011*, San Francisco, CA, USA, G23A-0833.

**Tung H.**, Huang, M.H., Hu, J.C., Ching, K.E., Rau, R.J., Hsieh, C.S., Pathier, E. and Deffontaines, B. (2009), "Active deformation of Tainan Tableland of southwestern Taiwan based on geodetic measurements and SAR interferometry", *10eme Anniversaire du Prix Scientifique Franco-Taiwanais*, Taipei, Taiwan.

**Tung, H.**, Chen, H.Y. and Hu, J.C. (2009), "Surface Deformation Analysis of the Active Faults revealed by InSAR observations and Geodetic Data in Southern Part of the Taitung Longitudinal Valley, Eastern Taiwan", *EGU General Assembly 2009*, Vienna, Austria, XY490.

**Tung, H.**, Huang, M.H. and Hu, J.C. (2008), "Surface deformation analysis using persistent scatterers InSAR technique: a case study in Tainan Tableland, southwestern Taiwan", *Asia Oceania Geosciences Society 2008*, Busan, Korea, SE88-A003.

**Tung, H.**, Huang, M.H. and Hu, J.C. (2008), "Monitoring of Active Deformation Based on Persistent Scatterers InSAR Technique: A Case Study in Tainan Tableland, Southwestern Taiwan", *Geological Annual Congress*, Tainan, Taiwan, G1-B70.

**Tung, H.**, Yen, J.Y. and Hu, J.C. (2008), "Surface deformation analysis using persistent scatterers technique: a case study of southwestern Taiwan area", *EGU General Assembly 2008*, Vienna, Austria, XY0390.

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# CURRICULUM VITAE

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Hsin Tung  
1983/11/03

**Tung, H.**, Huang, M.H., Hu, J.C., Cooksley, G., Duro, J., Arnaud, A., Fruneau, B. and Deffontaines, B. (2006), "Crustal deformation revealed from persistent scatterer SAR interferometry in SW Taiwan", *AGU Fall Meeting 2006*, San Francisco, CA, USA, T33D-0535.

**PROFESSIONAL  
AND  
HONORARY  
SOCIETIES**

American Geophysical Union (AGU) Member  
European Geosciences Union (EGU) Member  
Chinese Geophysical Union (CGU) Member

**INTERESTS**

Remote sensing  
Crustal deformation  
Seafloor Geodesy