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Education

- **Doctor of Philosophy in Space Science** Sep. 2007 — Oct. 2014
 - ◆ Graduate Institute of Space Science, National Central University, Taiwan
- **Master of Space Science** Sep. 2002 — June 2004
 - ◆ Graduate Institute of Space Science, National Central University, Taiwan
- **Bachelor of Physics** Sep. 1998 — June 2002
 - ◆ Department of Physics, Fu Jen Catholic University, Taiwan.

Work Experience

- **Postdoctoral fellow** Jan. 2019 — Present
Department of geosciences, National Taiwan University, Taiwan.
- **Postdoctoral fellow** Dec. 2014 — Dec. 2018
Institute of earth science, Academia Sinica, Taiwan.
- **Science teacher** Aug. 2012 — June 2014
Guan-In senior high school, Taiwan.
- **Physics teacher** Aug. 2011 — June 2012
Ger-Jyh senior high school, Taiwan.
- **Internal collaboration** Mar. 2009 — Mar. 2010
LPC2E/CNRS, France.

Areas of Expertise

- Seismo-electromagnetic phenomena
- Total electron content (TEC) analysis
- Ionospheric tidal waves
- Ionogram scale
- Ionospheric physics

Publications

- Tsai, T. C., Y. Y. Ho, **H. K. Jhuang**, L. C. Lee*, W. C. Su, S. L. Hung, Y. H. Li, K. H. Lee, C. C. Fu, and H. C. Lin (2021), Prediction of earthquakes with magnitude $M \geq 6.0$ in Taiwan by deep learning of ionosphere anomaly, *Sci. Rep.*, under revision.
- Tsai, T. C., **H. K. Jhuang***, L. C. Lee*, and Y. Y. Ho (2019), Ionospheric peaked structures and their local-time, seasonal, and solar activity dependence based on Global Ionosphere Maps, *J. Geophys. Res. Space Phys.*, **124**, 7994-8014, doi:10.1029/2019JA026899, SCI (IF = 2.75).

- **Jhuang, H. K.***, T. C. Tsai, L. C. Lee*, and Y. Y. Ho (2018), Ionospheric tidal waves observed from Global Ionosphere Maps: analysis of total electron content, *J. Geophys. Res. Space Phys.*, **123**, 6776-6797, doi:10.1029/2018JA025242, SCI (IF = 2.75).
- Ho, Y. Y.*, **H. K. Jhuang**, L. C. Lee*, and J. Y. Liu (2018), Ionospheric density and velocity anomalies before $M \geq 6.5$ earthquakes observed by DEMETER satellite, *J. Asian Earth Sci.*, **166**, 210-222, <https://doi.org/10.1016/j.jseaes.2018.07.022>, SCI (IF = 2.762).
- Ho, Y. Y., **H. K. Jhuang**, Y. C. Su, and J. Y. Liu* (2013), Seismo-ionospheric anomalies in total electron content of the GIM and electron density of DEMETER before the 27 February 2010 M8.8 Chile earthquake, *J. Adv. Space Res.*, <http://dx.doi.org/10.1016/j.asr.2013.02.006>, SCI (IF = 1.746).
- Sun, Y. Y.*, K.-I. Oyama, J. Y. Liu, **H. K. Jhuang**, and C. Z. Cheng(2011), The neutral temperature in the ionosphere dynamo region and the ionospheric F region density during Wenchuan and Pingtung Dohlet earthquakes, *Nat. Hazards*, DOI: 10.5194/nhess-11-1759-2011.
- **Jhuang, H. K.**, Y. Y. Ho, Y. Kakinami, J. Y. Liu*, K.-I. Oyama, M. Parrot, K. Hattori, M. Nishihashi, and D. Zhang (2010), Seismo-ionospheric anomalies of the GPS-TEC appear before the 12 May 2008 magnitude 8.0 Wenchuan Earthquake, *Int. J. Remote Sensing*, 31(13), 3579 – 3587, SCI (IF = 2.493).
- Nishihashi, M., K. Hattori*, **H. K. Jhuang**, and J. Y. Liu(2010), Possible spatial extent of ionospheric GPS-TEC and NmF2 anomalies related to the 1999 Chi-Chi and Chia-Yi Earthquakes in Taiwan, *Terr. Atmo. Oce. Sci.*, **20**, 779-789, DOI: 10.3319, SCI (IF = 0.543).
- J. Y. Liu*, Y. I. Chen, **H. K. Jhuang**, Y. H. Lin(2004), Ionospheric foF2 and TEC Anomalous Days Associated with $M \geq 5.0$ Earthquakes in Taiwan during 1997-1999, *Terr. Atmo. Oce. Sci.*, **15**, 385-396, SCI (IF = 0.543).

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Conference

- **Jhuang, H. K.**, T. C. Tsai, L. C. Lee, and Y. Y. Ho (2019), The ionospheric peaked structure in the low latitude region and their seasonal, and solar activity dependence in the local time frame based on Global Ionosphere Maps, Japan Geoscience Union Meeting 2019, Messe, Chiba, Japan.
- Tsai, T. C., **H. K. Jhuang**, L. C. Lee, and Y. Y. Ho (2019), The global total electron content reconstruction in the local time frame, Japan Geoscience Union Meeting 2019, Messe, Chiba, Japan.
- Tsai, T. C., **H. K. Jhuang**, L. C. Lee, Y. Y. Ho, S. L. Hung, and W. C. Su (2019), Deep learning of seismo-ionospheric precursors by using total electron content in Taiwan, Taiwan Geosciences Assembly, Taipei, Taiwan.
- **Jhuang, H. K.**, T. C. Tsai, L. C. Lee, and Y. Y. Ho (2019), The seasonal, and solar activity dependence of ionospheric tides in the low latitude region observed from total electron content, Taiwan Geosciences Assembly, Taipei, Taiwan.
- **Jhuang, H. K.**, Y. Y. Ho, C. C. Fu, L. C. Lee, and J. Y. Liu (2016), TEC anomalies before earthquakes and their asymmetry between northern and southern hemispheres, 5th International Geo-hazards Research Symposium .
- **Jhuang, H. K.**, Y. Y. Ho, L. C. Lee, and J. Y. Liu (2016), A study of the conjugate effect before M8.0 Wenchuan earthquake, International Workshop on Earthquake Precursor.
- Lee, L. C., C. C. Fu, Y. Y. Ho, **H. K. Jhuang**, C. L. Kuo, and P. K. Wang (2016), Observational

- earthquake precursor research in Taiwan and an electric coupling model of lithosphere, atmosphere and ionosphere. International Workshop on Earthquake Precursor.
- Ho, Y. Y., L. C. Lee, C. L. Kuo, J. Y. Liu, **H. K. Jhuang**, and M. Parrot (2016), Ionospheric anomalies of plasma density and velocity before large earthquakes, International Workshop on Earthquake Precursors. International Workshop on Earthquake Precursor, Taipei.
 - **Jhuang, H. K.**, Y. Y. Ho, J. Y. Liu, and L. C. Lee (2016), Imperfect coupling between northern and southern ionospheres: asymmetry in TEC anomalies before earthquakes, European Geosciences Union General Assembly 2016, Austria.
 - Ho, Y. Y., L. C. Lee, C. L. Kuo, **H. K. Jhuang**, and M. Parrot (2016), Anomalies of electron density and ion velocity in the ionosphere before large earthquakes: Comparisons between DEMETER observations and SAMI3 simulations., European Geosciences Union General Assembly 2016, Austria.
 - Y. Y. Ho, L. C. Lee, C. L. Kuo, **H. K. Jhuang**, and M. Parrot (2015), Anomalies of Electron density and velocity in the ionosphere before large earthquake: Comparison between DEMETER observations and SAMI3 simulations. 2015 Pre-AGU Meeting, U.S.A.
 - **Jhuang, H. K.**, Y. Y. Ho, and J. Y. Liu (2011), The Midlatitude Electron Density Enhancement Observed by DEMETER, Asia Oceania Geosciences Society, Taiwan.
 - Ho, Y. Y., J. Y. Liu, and **H. K. Jhuang** (2011), The plasmopause observed by DEMETER satellite during 2005-2010, Asia Oceania Geosciences Society, Taipei, Taiwan.
 - Liu, J. Y., Y. I. Chen, and **H. K. Jhuang** (2011), The Chance of Observing Seismo-ionospheric Anomalies Associated with the 11 March 2011 M9.0 Miyagi Earthquake at Taiwan, Asia Oceania Geosciences Society, Taiwan.
 - **Jhuang, H. K.**, M. Parrot, and J. Y. Liu (2010), Study of ionospheric electron variations prior to $M \geq 6.0$ earthquakes, Western Pacific Geophysics Meeting, Taipei, Taiwan.
 - Liu, J. Y., C. C. Hsiao, K.-I. Oyama, **H. K. Jhuang** and Y. H. Wang (2007), The First Results About Earthquake Study with FORMOSAT-3/COSMIC, American Geophysical Union 2007 Fall Meeting, San Francisco, USA.
 - Nishihashi, M., **H. K. Jhuang**, K. Hattori, and J. Y. Liu (2007), Spatial distribution of ionospheric GPS-TEC and NmF2 disturbances prior to the 1999 Chi-Chi and Chia-Yi Earthquakes, International Union of Geodesy and Geophysics, Perugia, Italy.
 - Ho, Y. Y., **H. K. Jhuang**, and J. Y. Liu (2007), Seismo-anomalies of Ground- and Space-Based observations During $M \geq 5.0$ Earthquakes in Taiwan, International Union of Geodesy and Geophysics, Perugia, Italy.
 - **Jhuang, H. K.**, J. Y. Liu, Y. I. Chen, and Y. H. Lin (2005), Ionospheric foF2 and TEC anomalies during $M \geq 5.0$ Taiwan earthquakes, International Workshop on Seismoelectromagnetics, Tokyo, Japan.
 - 蔡宗哲, **莊皓琨**, 李羅權, 何宜穎 (2018), Ionospheric migrating and non-migrating tides observed by total electron content, 第十三屆兩岸太空/空間科學研討會.
 - 李羅權、林正洪、傅慶州、王鵬綱、**莊皓琨**、何宜穎 (2016), 伽瑪射線、熱紅外長波輻射與電離層之地震前兆研究 Results from Gamma Ray Sensors, Outgoing Long-Wave Radiation and Total Electron Content as Earthquake Precursors。科技部地震前兆討論會, 科技部。
 - 李羅權、林正洪、傅慶州、王鵬綱、**莊皓琨**、何宜穎 (2016), 伽瑪射線與熱紅外長波輻射之地震前兆研究, 臺灣地區地震活動暨前兆分析討論會, 中央氣象局。

- Lee, L. C., P. K. Wang, **H. K. Jhuang**, Y. Y. Ho and C. C. Fu (2015), Precursors of the 25 April 2015 Nepal Earthquake: Total Electron Content (TEC) and Outgoing Long-wavelength Radiation (OLR) Anomalies, 第八屆世界華人地質大會.
- 李羅權, 林正洪, 傅慶州, **莊皓琨**, 王鵬綱 (2015), OLR and TEC precursors for the Earthquake on April 20, 2015, 2015/04/20 東部海域地震學術研討會, 台北, 台灣.
- 何宜穎, **莊皓琨**, 劉正彥 (2007), 台灣地區大規模地震期間之地面及太空觀測, 台灣地球科學聯合學術研討會, 桃園, 台灣.
- 何宜穎, **莊皓琨**, 林鈺翔, 劉正彥 (2003), 地震期間大氣與電離層電磁異常現象, 第十屆台灣地區地球物理研討會, 嘉義, 台灣.