

JANN-YENQ LIU (劉正彥)

Highest Education: Ph.D., Utah State Univ., USA (1990)

Present Position: Professor (1997--)

Joined NCU Faculty: 1990.8

Research Specialty: Ionospheric Physics, Space Physics

E-mail address: jyliu@jupiter.ss.ncu.edu.tw

A. Refereed Papers

Le, H., L. [J. Y. Liu](#), B. Zhao, Y. Chen, W. Wan,

The ionospheric anomalies prior to the M9.0 Tohoku-Oki earthquake,

Journal of Asian Earth Sciences, 62, 476-484, doi:10.1016/j.jseaes.2012.10.034, Jan. 2013. (SCI)

Chen, C. H., S. Wen, T. K. Yeh, C. H. Wang, H. Y. Yen, [J. Y. Liu](#), Y. Hobara, P. Han,

Observation of surface displacements from GPS analyses before and after the Jiashian earthquake (M=6.4) in Taiwan,

Journal of Asian Earth Sciences, 62, 662-671, doi:10.1016/j.jseaes.2012.11.016, Jan. 2013. (SCI)

Chen, C. H., H. L. Hsu, S. Wen, T. K. Yeh, F. Y. Chang, C. H. Wang, [J. Y. Liu](#), Y. Y. Sun, K. Hattori, H. Y. Yen, and P. Han,

Evaluation of seismo-electric anomalies using magnetic data in Taiwan,

Natural Hazards and Earth System Sciences, 13, 1-8, doi:10.5194/nhess-13-1-2013. Jan. 2013. (SCI)

Kakinami Y., M. Kamogawa, S. Watanabe, M. Odaka, T. Mogi, [J. Y. Liu](#), Y. Y. Sun, and T. Yamada,

Ionospheric ripples excited by superimposed wave fronts associated with Rayleigh waves in the thermosphere,

Journal of Geophysical Research: Space Physics, 118, 905-911, doi:10.1002/jgra.50099, Feb. 2013. (SCI)

[Liu, J. Y.*](#), C. H. Chen, H. F. Tsai and H. Le,

A Statistical Study on Seismo-Ionospheric Anomalies of the Total Electron Content for the Period of 56 $M \geq 6.0$ Earthquakes Occurring in China During 1998-2012,

Chinese Journal of Space Science, 0254-2164/2013/33(3): 258-269, Feb. 2013.

Ho, Y. Y., H. K. Jhuang, Y. C. Su, [J. Y. Liu*](#),

Seismo-ionospheric anomalies in total electron content of the GIM and electron density of DEMETER before the 27 February 2010 M8.8 Chile earthquake,

Advances in Space Research, 51, 2039-2015, doi.org/10.1016/j.asr.2013.02.006, Feb 2013. (SCI)

Balan, N., P.K. Rajesh, S. Sripathi, S. Tulasiram, [J.Y. Liu](#), G. J. Bailey,

Modeling and observations of the north-south ionospheric asymmetry at low latitudes at long deep solar minimum,

Advances in Space Research, 52, 375-382, doi:10.1016/j.asr.2013.04.003, May 2013. (SCI)

Chang, L. C., C. H. Lin, J. Y. Liu, N. Balan, J. Yue, and J. T. Lin,

Seasonal and local time variation of ionospheric migrating tides in 2007–2011 FORMOSAT-3/COSMIC and TIE-GCM total electron content,

Journal of Geophysical Research: space physics, 118, 2545-2564, doi:10.1002/jgra. 50268, May 2013.(SCI)

Balan, N., Y. Otsuka, M. Nishioka, J. Y. Liu, and G. Bailey,

Physical mechanisms of the ionospheric storms at equatorial and higher latitudes during the recovery phase of geomagnetic storms,

Journal of Geophysical Research: Space Physics, 118, 2660-2669, doi:10.1002/jgra.50275, May 2013. (SCI)

Chen, C. H., C. H. Wang, S. Wen, T. K. Yeh, C. H. Lin, J. Y. Liu, H. Y. Yen, C. Lin, R. J. Rau, and T. W. Lin,

Anomalous frequency characteristics of groundwater level before major earthquakes in Taiwan,

Hydrology and Earth System Sciences, 17, 1693–1703, doi:10.5194/hess-17-1693-2013, May 2013. (SCI)

Sun, Y. Y., T. Matsuo, A. P. Eduardo, and J. Y. Liu*,

Ground-based GPS Observation of SED-associated irregularities over CONUS,

Journal of Geophysical Research: Space Physics, 118, 2474-2489, doi:10.1029/2012JA018103, May 2013. (SCI)

Liu, J. Y.*, K. Wang, C. H. Chen, W. H. Yang, Y. H. Yen, Y. I. Chen, K. Hatorri, H. T. Su, R. R. Hsu, and C. H. Chang,

A statistical study on ELF-whistlers/emissions and $M \geq 5.0$ earthquakes in Taiwan,

Journal of Geophysical Research: Space Physics, 118, 3760-3768, doi:10.1002/ jgra.50356, June 2013. (SCI)

Chen, C. H., C. H. Lin, L. C. Chang, J. D. Huba, J. T. Lin, A. Saito and J. Y. Liu,

Thermospheric tidal effects on the ionospheric midlatitude summer nighttime anomaly using SAMI3 and TIEGCM,

Journal of Geophysical Research: space physics, 118, 3836-3845, doi:10.1002/ jgra.50340, June 2013. (SCI)

Liu, J. Y.*, W. H. Yang, C. H. Lin, Y. I. Chen, and I. T. Lee,

A statistical study on the characteristics of ionospheric storms in the equatorial ionization anomaly region: GPS-TEC observed over Taiwan,

Journal of Geophysical Research: Space Physics, 118, 3856-3865, doi:10.1002/jgra. 50366, June 2013. (SCI)

Hsiao, C. C., J. Y. Liu*, and Y. H. Wang,

An error analysis on nature and radar system noises in deriving the phase and group velocities of vertical propagation waves,

Earth Planets and Space, 65, 911–916, doi:10.5047/eps.2013.01.004, Sep. 2013. (SCI)

Su, Y. C., J. Y. Liu*, S. P. Chen, H. F. Tsai, and M. Q. Chen,

Temporal and spatial precursors in ionospheric total electron content of the 16 October 1999 Mw7.1 Hector Mine earthquake,

Journal of Geophysical Research: Space Physics, 118, 6511–6517, doi:10.1002/jgra.50586, Oct. 2013. (SCI)

Lee, I. T., H. F. Tsai, J. Y. Liu*, C. H. Lin, T. Matsuo, L. C. Chang,

Modeling impact of FORMOSAT-7/COSMIC-2 mission on ionospheric space weather monitoring,

Journal of Geophysical Research: Space Physics, 118, 6518-6523, doi:10.1002/jgra.50538, Oct. 2013. (SCI)

Chang, L. C., C. H. Lin, J. Yue, J. Y. Liu, J. T. Lin,

Stationary Planetary Wave and Nonmigrating Tidal Signatures in Ionospheric Wave-3 & Wave-4 variations in 2007-2011 FORMOSAT-3/ COSMIC observations,

Journal of Geophysical Research: Space Physics, 118, 6651-6665, doi:10.1002/jgra.50583, Oct. 2013. (SCI)

Chen, C. H., S. Wen, J. Y. Liu, K. Hattori, P. Han, Y. Hobara, C. H. Wang, T. K. Yeh, H. Y. Yen,

Surface displacements in Japan before the 11 March 2011 M9.0 Tohoku-Oki earthquake,

Journal of Asian Earth Sciences. 80, 165–171, doi:10.1016/j.jseaes.2012.11.016. Nov. 2013. (SCI)

Ho, Y. Y., J. Y. Liu*, M. Parrot, and J. L. Pincon,

Temporal and spatial analyses on seismo-electric anomalies associated with the 27 February 2010 M=8.8 Chile earthquake observed by DEMETER satellite,

Natural Hazards and Earth System Sciences, 13, 3281-3289, doi:10.5194/nhess-13-1-2013, Dec. 2013. (SCI)

Huang C. S., O. de La Beaujardiere, P. A. Roddy, D. E. Hunton, J. Y. Liu, and S. P. Chen,

Occurrence probability and amplitude of equatorial ionospheric irregularities associated with plasma bubbles during low and moderate solar activities (2008-2012),

Journal of Geophysical Research: Space Physics, 119, 1186-1199, doi:10.1002/2013JA019212, Feb. 2014. (SCI)

Yeh, W. H. J. Y. Liu*, C. Y. Huang, and S. P. Chen,

Explanation of the sporadic-E layer formation by comparing FORMOSAT-3/COSMIC data with meteor and wind shear information,

Journal of Geophysical Research : Atmospheres, 119, 4568–4579, doi: 10.1002/2013JD020798, Apr. 2014. (SCI)

Rajesh P. K., C. H. Chen, C. H. Lin, J. Y. Liu, J. D. Huba, A. B. Chen, R. R. Hsu, and Y. T. Chen,

Low-latitude midnight brightness in 630.0 nm limb observations by FORMOSAT-2/ISUAL,

Journal of Geophysical Research: Space Physics, 119, 4894-4904, doi:10.1002/2014JA019927. June 2014. (SCI)

Han, P., K. Hattori, M. Hirokawa, J. Zhuang, C. H. Chen, F. Febriani, H. Yamaguchi, C. Yoshino, J. Y. Liu, S. Yoshida,
Statistical analysis of ULF seismomagnetic phenomena at Kakioka, Japan, during 2001-2010,

Journal of Geophysical Research: Space Physics, 119, 4998-5011, doi:10.1002/2014JA019789. June 2014. (SCI)

Yeh, W. H., C. Y. Huang, T. C. Chiu, M. Q. Chen, J. Y. Liu, and Y. A. Liou,

Ray tracing simulation in nonspherically symmetric atmosphere for GPS radio occultation,

Terrestrial Atmospheric and Oceanic Sciences, 25, No.6, 801-812, doi:10.3319/TAO.2014.07.07.01(A), Jul. 2014. (SCI)

Sun, Y. Y., J. Y. Liu*, H. F. Tsai, C. H. Lin, Y. H. Kuo,

The Equatorial El Niño-Southern Oscillation Signatures Observed by FORMOSAT-3/COSMIC from July 2006 to January 2012,

Terrestrial Atmospheric and Oceanic Sciences, 25, No.4, 545-558, doi:10.3319/TAO.2014.02.13.01(A), Au. 2014. (SCI)

Lee T. P., P. K. Rajesh, C. Y. Chen, J. Y. Liu*, C. J. Fong, J. C. Pon, S. K. Yang, and G. S. Chang,

Abnormal signatures recorded by FORMOSAT-2 and FORMOSAT-3 over South Atlantic Anomaly and Polar Region, Terrestrial Atmospheric and Oceanic Sciences, 25, No.4, 573-580, doi:10.3319/TAO.2014.02.26.01(AA), Aug. 2014. (SCI)

Lin, C. H., J. T. Lin, C. H. Chen, J. Y. Liu, Y. Y. Sun, Y. Kakinami, M. Matsumura, W. H. Chen, H. Liu, and R. J. Rau, Ionospheric shock waves triggered by rockets,

Annales Geophysicae, 32, 1145-1152, doi:10.5194/angeo-32-1145-2014, Sep. 2014. (SCI)

Yue X. N, W. S. Schreiner, N. Pedatella, R. A. Anthes, A. J. Mannucci, P. R. Straus, and J. Y. Liu,

Space weather observations by GNSS radio occultation: from FORMOSAT-3/COSMIC to FORMOSAT-7/COSMIC-2, Space Weather, 12, Issue11, 616-621, Nov. 2014 doi:10.1002/2014 SW001133, 2014. (SCI)

Hsu, C. T., T. Matsuo, W. Wang, and J. Y. Liu,

Effects of inferring unobserved thermospheric and ionospheric state variables by using an Ensemble Kalman Filter on global ionospheric specification and forecasting,

Journal of Geophysical Research: Space Physics, 119, 9256–9267, doi:10.1002/2014JA020390, Nov. 2014. (SCI)

Liu, J. Y.*, F. Y. Chang, K. I. Oyama, Y. Kakinami, H. C. Yeh, T. L. Yeh, S. B. Jiang, and M. Parrot,

Topside ionospheric electron temperature and density along the Weddell Sea latitude,

Journal of Geophysical Research: Space Physics, 119, 1-6, doi:10.1002/2014JA020227, NOV. 2014. (SCI)

Chen, Y. T., C. H. Lin, C. H. Chen, J. Y. Liu, J. D. Huba, L. C. Chang, H. L. Liu, J. T. Lin, and P. K. Rajesh,

Theoretical study of the ionospheric plasma cave in the equatorial ionization anomaly region,

Journal of Geophysical Research: Space Physics, 119, 10324-10335, doi:10.1002/2014JA020235, DEC. 2014. (SCI)

Lin, C. Y., Matsuo, T., Liu, J. Y.*, Lin, C. H., Tsai, H. F., and Araujo-Pradere, E. A.,

Ionospheric assimilation of radio occultation and ground-based GPS data using non-stationary background model error covariance,

Atmospheric Measurement Techniques, 8, 171-182, doi:10.5194/amt-8-171-2015, JAN. 2015. (SCI)

Sun, Y. Y., J. Y. Liu*, C. K. Chao, and C. H. Chen,

Intensity of low-latitude nighttime F-region ionospheric density irregularities observed by ROCSAT and ground-based GPS Receivers in solar maximum,

Journal of Atmospheric and Solar-Terrestrial Physics, 123, 92-101, doi:10.1016/j.jastp.2014.12.013, JAN. 2015. (SCI)

Chang, L. C., H. Liu, Y. Miyoshi, C. H. Chen, F. Y. Chang, C. H. Lin, J. Y. Liu, and Y. Y. Sun,
Structure and origins of the Weddell Sea Anomaly from tidal and planetary wave signatures in FORMOSAT-3/COSMIC observations and GAIA GCM simulations,
Journal of Geophysical Research: Space Physics, 120, Issue2, 1325-1340, doi:[10.1002/2014JA020752](https://doi.org/10.1002/2014JA020752), FEB. 2015. (SCI)

Sun, Y. Y., C. H. Chen, J. Y. Liu*, C. H. Wang, and D. L. Chen,
Instantaneous phase shift of annual subsurface temperature cycles derived by the Hilbert-Huang transform,
Journal of Geophysical Research Atmospheres, **120**, 1670-1677, doi:10.1002/2014JD022574. MAR. 2015. (SCI)

Chen, C.H., Tang, C. C. Tang, K. C. Cheng, C. H. Wang, S. Wen, C. H. Lin, Y. Y. Wen, G. Meng, T. K. Yeh, J. C. Jan, H. Y. Yen, and J. Y. Liu,
Groundwater-strain coupling before the 1999 M_w 7.6 Taiwan Chi-Chi earthquake,
Journal of Hydrology, **524**, 378–384, doi:10.1016/j.jhydrol.2015.03.006. MAR. 2015. (SCI)

Chen, Y. I., C. S. Huang, and J. Y. Liu,
Statistical analysis of earthquakes after the 1999 M_w 7.7 Chi-Chi, Taiwan, earthquake based on a modified Reasenberg-Jones model,
Journal of Asian Earth Science, **114**, 299-304, doi:10.1016/j.jseaes.2015.02.018. MAR. 2015. (SCI)

Chen, C. H., C. H. Lin, C. H. Wang, J. Y. Liu, T. K. Yeh, H. Y. Yen, and T. W. Lin,
Potential relationships between seismo-deformation and seismo-conductivity anomalies,
Journal of Asian Earth Science, **114**, 327-337, doi:10.1016/j.jseaes.2015.03.023. MAR. 2015. (SCI)

Sun, Y. Y., T. Matsuo, N. Maruyama, and J. Y. Liu*,
Field-Aligned Neutral Wind Bias Correction Scheme for Global Ionospheric Modeling at Midlatitudes by Assimilating FORMOSAT-3/ COSMIC hmF2 data under Geomagnetically Quiet Conditions,
Journal of Geophysical Research: Space Physics, 120, 3130-3149, doi:10.1002/2014JA020768. APR. 2015. (SCI)

Zeng, X., Y. Lin, W. Chen, Z. Bai, J. Y. Liu, and C. H. Chen,
Multiple seismo-anomalies associated with the M6.1 Ludian earthquake on August 3, 2014,
Journal of Asian Earth Science, **114**, 352-361, doi:10.1016/j.jseaes.2015.04.027. APR. 2015. (SCI)

Liu, J. Y.*, Y. I. Chen, C. C. Huang, M. Parrot, X. H. Shen, S.A. Pulnits , Q. S. Yang, and Y. Y. Ho,
A spatial analysis on seismo-ionospheric anomalies observed by DEMETER during the 2008 M8.0 Wenchuan earthquake,
Journal of Asian Earth Science, **114**, 414-419, doi:10.1016/j.jseaes.2015.06.012 JUN. 2015. (SCI)

Chen, Y. I., C. S. Huang, and J. Y. Liu*,
Statistical evidences of seismo-ionospheric precursors applying Receiver Operating Characteristic (ROC) curve on the GPS total electron content in China,
Journal of Asian Earth Science, **114**, 393-402, doi:10.1016/j.jseaes.2015.05.028. JUL. 2015. (SCI)

Liu, J. Y.*, C. Y. Lin, and H. F. Tsai, Electron density profiles probed by radio occultation of FORMOSAT-7/COSMIC-2 at 520 and 800 km altitude, *Atmospheric Measurement Techniques*, **8**, 3069-3074, doi:10.5194/amt-8-3069-2015, AUG. 2015. (SCI)

Hegaia V. V., V.P. Kima, J.Y. Liu,

On a possible seismomagnetic effect in the topside ionosphere,

Advances in Space Research, 56, Issue 8, 1707-1713, doi:10.1016/j.asr.2015.07.034, AUG. 2015. (SCI)

Chang F. Y., J. Y. Liu*, L. C. Chang, C. H. Lin, C. H. Chen,

Three-dimensional electron density along the WSA and MSNA latitudes probed by FORMOSAT-3/COSMIC,

Earth, Planets and Space, 1-8, doi:10.1186/s40623-015-0326-8, SEP. 2015. (SCI)

Ryu K., K. I. Oyama, L. Bankov, C. H. Chen, M. Devi, H. Liu, J. Y. Liu,

Precursory enhancement of EIA in the morning sector: Contribution from mid-latitude large earthquakes in the north-east Asian region,

Advances in Space Research, **57**, 268-280, SEP. 2015. (SCI)

Liu, J. Y.*, Y. I. Chen, C. H. Huang, Y. Y. Ho, C. H. Chen,

A Statistical Study of Lightning Activities and $M \geq 5.0$ Earthquakes in Taiwan During 1993–2004,

Surveys in Geophysics, 36:851-859, doi:10.1007/s10712-015-9342-2, OCT. 2015. (SCI)

Kamogawa, M., T. Kanaya, Y. Orihara, A. Toyoda, Y. Suzuki, S. Togo, and J. Y. Liu,

Does an ionospheric hole appear after an inland earthquake?

Journal of Geophysical Research: Space Physics, **120**, 9998-10005, doi:10.1002/2015JA021476. NOV. 2015. (SCI)

Hirooka Shinji, T. Ichikawa, K. Hattori P. Han, C. Yoshino, and J. Y. Liu,

Spatial Temporal Distribution of the Pre-Seismic Ionospheric Anomaly Prior to the 2011 off the Pacific Coast of Tohoku Earthquake (Mw9.0),

IEEJ Transactions on Fundamentals and Materials, 136, No.5, 265-271, doi:10.1541/ieejfms.136.265. NOV. 2015. (SCI)

Liu, J. Y.*, Y. B. Tsai, C. H. Chen, Y. I. Chen, H. Y. Yen,

Integrated Search for Taiwan Earthquake Precursors (iSTEP),

IEEJ Transactions on Fundamentals and Materials, 136, No.5, 214-220, doi:10.1541/ieejfms.136.214. (SCI)

Liu, J. Y.*, S. P. Chen, W. H. Yeh, H. F. Tsai, and P. K. Rajesh,

Worst-case GPS scintillations on the ground estimated from radio occultation observations of FORMOSAT-3/COSMIC during 2007-2014,

Surveys in Geophysics, 37:791–809, doi:10.1007/s10712-015-9355-x. (SCI)

Liu, J. Y.*, C. H. Chen, Y. Y. Sun, C. H. Chen, H. F. Tsai, H. Y. Yen, J. Chum, J. Lastovicka, Q. S. Yang, W. S. Chen, S. Wen,

The vertical propagation of disturbances triggered by seismic waves of the 11 March 2011 M9.0 Tohoku Earthquake over Taiwan,

Geophysical Research Letters, **43**, 1759-1765, doi:10.1002/2015GL067487. (SCI)

Rajesh, P. K., J. Y. Liu, N. Balan, C. H. Lin, Y. Y. Sun, and S. A. Pulnits,

Morphology of midlatitude electron density enhancement using total electron content measurements,

Journal of Geophysical Research: Space Physics, **121**, 1503-1517, doi:10.1002/2015JA022251. (SCI)

Maruyama, N., Y. Y. Sun, P. G. Richards, J. Middlecoff, T. W. Fang, T. J. Fuller Rowell, R. A. Akmaev, J. Y. Liu, and C. Valladares,

A new source of the midlatitude ionospheric peak density structure revealed by a new Ionosphere-Plasmasphere model,

Geophysical Research Letters, **43**, 2429-2435, doi:10.1002/2015GL067312. (SCI)

Chum Jaroslav, J. Y. Liu, S. P. Chen, M. A. Cabrera, J. Laštovička, J. Baše, D. Burešová, J. Fišer, F. Hruška and R. Ezquer,

Spread F occurrence and drift under the crest of the equatorial ionization anomaly from continuous Doppler sounding and FORMOSAT-3/COSMIC scintillation data,

Earth, Planets and Space, 68:56, 1-18, doi: 10.1186/s40623-016-0433-1. (SCI)

Rajesh, P. K., J. Y. Liu, C. H. Lin, A. B. Chen, R. R. Hsu, C. H. Chen, and J. D. Huba,

Space-based imaging of nighttime medium-scale traveling ionospheric disturbances using FORMOSAT-2/ ISUAL 630.0nm airglow observations,

Journal of Geophysical Research: Space Physics, **121**, 4769-4781, doi:10.1002/2015JA022334. (SCI)

Chen, C. H., C. H. Lin, T. Matsuo, W. H., Chen, I. T., Lee, J. Y., Liu, J. T. Lin, and C. T., Hsu,

Ionospheric data assimilation with thermosphere-ionosphere-electrodynamics general circulation model and GPS-TEC during geomagnetic storm conditions,

Journal of Geophysical Research, **121**, 5708-5722, doi:10.1002/2015JA021787, (SCI)

Liu, J. Y.*, Loren C. W. Chang, C. K. Chao, M. Q. Chen, Y. H. Chu, L. N. Hau, C. M. Huang, C. L. Kuo, L. C. Lee, L. H. Lyu, C. H. Lin, C. J. Pan, J. H. Shue, C. L. Su, L. C. Tsai, Y. H. Yang, C. H. Lin, R. R. Hsu and H. T. Su,

The fast development of solar terrestrial sciences in Taiwan,

Geoscience Letters, 3:18, 1-11, doi:10.1186/s40562-016-0049-0. (SCI)

Sun, Y. Y., J. Y. Liu, C. Y. Lin, H. F. Tsai, Loren C. W. Chang, C. Y. Chen, and C. H. Chen,

Ionospheric F2 region perturbed by the 25 April 2015 Nepal earthquake,

Journal of Geophysical Research: Space Physics, **121**, 5778–5784, doi:10.1002/2015JA022280. (SCI)

Han, P., K. Hattori, J. Zhuang, C. H. Chen, J. Y. Liu, and S. Yoshida,

Evaluation of ULF seismo-magnetic phenomena in Kakioka, Japan by using Molchan's error diagram,

Geophysical Journal International, **208**, 482-490, doi: 10.1093/gji/ggw404. (SCI)

Kamogawa, M., Y. Orihara, C. Tsurudome, Y. Tomida, T. Kanaya, D. Ikeda, A. R. Gusman, Y. Kakinami, J. Y. Liu, and A. Toyoda,

A possible space-based tsunami early warning system using observations of the tsunami ionospheric hole, *Scientific Reports*, **6**, 37989, 1-7, doi:10.1038/srep37989. (SCI)

Chou, M. Y., C. C. H. Lin, J. Yue, H. F. Tsai, Y. Y. Sun, J. Y. Liu, and C. H. Chen,

Concentric traveling ionosphere disturbances triggered by Super Typhoon Meranti (2016), *Geophysical Research Letters*, **44**, Issue 3, 1219-1226, doi: 10.1002/2016GL072205. (SCI)

Lin, Z. W., C. K. Chao, J. Y. Liu, C. M. Huang, Y. H. Chu, C. L. Su, Y. C. Mao, and Y. S. Chang,

Advanced Ionospheric Probe scientific mission onboard FORMOSAT-5 satellite. *Terrestrial Atmospheric and Oceanic Sciences*, **28**, 99-110, doi: 10.3319/TAO.2016.09.14.01(EOF5). (SCI)

Liu, J. Y.*, Y. Y. Sun, C. K. Chao, S. P. Chen, and M. Parrot,

An observing system simulation experiment for FORMOSAT-5/AIP probing topside ionospheric plasma irregularities by using DEMETER/IAP,

Terrestrial Atmospheric and Oceanic Sciences, **28**, 111-116, doi:10.3319/TAO.2016.08.18.01(EOF5). (SCI)

Liu, J. Y.*, and C. K. Chao,

An observing system simulation experiment for FORMOSAT-5/AIP detecting seismo-ionospheric precursors,

Terrestrial Atmospheric and Oceanic Sciences, **28**, 117-127, doi: 10.3319/TAO.2016.07.18.01(EOF5). (SCI)

Chen, C. H., C. C. H. Lin, J. Y. Liu, T. Matsuo, and W. H. Chen,

The impact of FORMOSAT-5/AIP observations on the ionospheric space weather, *Terrestrial Atmospheric and Oceanic Sciences*, **28**, 129-137, doi: 10.3319/TAO.2016.09.30.01(EOF5). (SCI)

Chang, H. P., G. S. Chang, and J. Y. Liu,

Introduction to the Special Issue on "Earth Observation FORMOSAT-5".

Terrestrial Atmospheric and Oceanic Sciences, **28**, I-II, doi: 10.3319/TAO.2017.02.07.01(EOF5). (SCI)

Liu J. Y.*, C. H. Chen, T. Y. Wu, H. C. Chen, K. Hattori, I. C. Yang, T. Bleier, K. Kappler, Y. Xia, W. Chen, and Z. Liu,

Co-seismic signatures in magnetometer, geophone, and infrasound data during the Meinong Earthquake,

Terrestrial Atmospheric and Oceanic Sciences, **28**, doi: 10.3319/TAO.2017.03.05.01. Accepted. (SCI)

Sun, Y. Y., J. Y. Liu*, H. F. Tsai, A. Krankowski,

Global ionosphere map constructed by using total electron content from ground-based GNSS receiver and FORMOSAT-3/COSMIC GPS occultation experiment,

GPS Solutions, doi: 10.1007/s10291-017-0635-4. Accepted. (SCI)

B.三年內執行之研究計畫

學年度	研究計畫名稱	計畫經費	補助單位
104	近地環境探測與模擬(1/2) (2/2)-台波	480,000	科技部
	電離層地震前兆(4/4)	9,000,000	科技部
	台捷(CZ)國合計畫-低層大氣重力波或次聲波對高層大氣和電離層之衝擊(1/3)	1,005,000	科技部
105	台捷(CZ)國合計畫-低層大氣重力波或次聲波對高層大氣和電離層之衝擊(2/3)	1,055,000	科技部
	科普活動：火星探索與移民	820,000	科技部
	整合研究與測試地震前兆-整合研究與測試地震前兆(1/4)	11,900,000	科技部
	利用電離層全電子含量和熱紅外遙測地震前兆研究	1,227,000	科技部
106	台捷(CZ)國合計畫-低層大氣重力波或次聲波對高層大氣和電離層之衝擊(3/3)	1,125,000	科技部
	整合研究與測試地震前兆-整合研究與測試地震前兆(2/4)	11,970,000	科技部
	太空天氣模式測報系統建置 106 年工作委託辦理案	1,220,000	氣象局

C.三年內開授課程

學年度	(必/選)課程名稱	選修人數
102	上學期 (選)高等電離層物理 I	3 人
	(選)電離層物理特論 III	3 人
	下學期 (選)高等電離層物理 II	3 人
	(選)電離層物理特論 I	4 人
103	上學期 (選)高等電離層物理 I	7 人
	(選)電離層物理特論 II	4 人
	下學期 (選)高等電離層物理 II	7 人
	(選)電離層物理特論 III	4 人
104	上學期 (選)太空測計及操作 I	22 人
	(選)電離層物理特論 I	5 人
	下學期 (選)電離層物理 I	4 人
	(選)高等電離層物理 I	1 人
106	上學期 (選)太空測計及操作 I	28 人
	(必)高等太空科學 I	33 人
	(選)電離層物理特論 I	4 人
	下學期 (選)專題討論	6 人
	(選)高等電離層物理 I	6 人
	(選)電離層物理特論 II	2 人

D.三年內指導研究生狀況

學年度	博士班(人)	碩士班(人)	畢業人數	
			博士	碩士
104	4	6	0	5
105	5	6	0	5
106	5	2	2	1

E.三年內之學術性服務工作項目(請註明校內或校外)

學年度	校內/校外
103-104	Journal of Asian Earth Sciences (JAES) special issue: iSTEP, Guest Editor
103-104	Atmospheric Measurement Techniques (AMT) special issue Observing Atmosphere and Climate with Occultation Techniques - Results from the OPAC-IROWG 2013 Workshop, Guest Editor
104	International Association of Geomagnetism and Aeronomy (IAGA)主席(校外)

F.三年內之教研獎勵事蹟

學年度	國科會	其他(請證明)
103		中央大學特聘教授一級 科技部傑出研究獎
104		中大太空科學講座