






Waraporn Nuntiyakul, Ph.D.

✉ waraporn.n@cmu.ac.th  Waraporn Nuntiyakul
 <http://www.antarcticthai.com/>



Employment History







- 2018 – Present  **Assistant Professor.** Department of Physics and Materials Science, Faculty of Science, Chiang Mai University.
Field of expertise: Cosmic rays, Latitude survey, Neutron monitors, Neutrino (Ice-Cube Collaboration), High energy particles, Astrophysics, Data analysis, Numerical simulation
- 2017 – 2018  **Lecturer.** Department of Physics and Materials Science, Faculty of Science, Chiang Mai University.
- 2006 – 2017  **Lecturer.** Program of Physics, Faculty of Science, Chandrakasem Rajabhat University.

Education

- 2009 – 2014  **Ph.D. Physics, Mahidol University.**
Dissertation title: *Analysis of Data from a Calibration Neutron Monitor at Doi Inthanon and a Ship-Borne Neutron Monitor.*
Advisor: Prof. Dr. David Ruffolo
- 2003 – 2006  **M.Sc. Physics (highest GPA), Kasetsart University.**
Thesis title: *Study on Activity Determination by Using Liquid Scintillation Spectrometer via CIEMAT/NIST method..*
Advisor: Asst. Prof. Dr. Teerasak Veerapasong
- 1999 – 2003  **B.Sc. Physics (Honors with highest GPA), Silpakorn University.**
Advisor: Assoc. Prof. Dr. Serm Janjai

Research Publications

Journal Articles


-  M. Phetra, Malcolm D. Gray, K. Asanok, Busaba H. Kramer, K. Sugiyama, T. Chanapote, and **W. Nuntiyakul**. “Maser polarization simulation in the circumstellar envelope of an evolving star”. In: *Journal of Physics Conference Series* 2431, 012088 (Jan. 2023), p. 012088.  DOI: 10.1088/1742-6596/2431/1/012088.
-  Nutthawara Buatthaisong, David Ruffolo, Alejandro Sáiz, Chanoknan Banglieng, Warit Mitthumsiri, Tanin Nutaro, and **Waraporn Nuntiyakul**. “Extended Cosmic Ray Decreases with Strong Anisotropy after Passage of Interplanetary Shocks”. In: *Astrophysical Journal* 939.2, 99 (Nov. 2022), p. 99.  DOI: 10.3847/1538-4357/ac96ea.
-  K. Munakata, M. Kozai, C. Kato, Y. Hayashi, R. Kataoka, A. Kadokura, M. Tokumaru, R. R. S. Mendonça, E. Echer, A. Dal Lago, M. Rockenbach, N. J. Schuch, J. V. Bageston, C. R. Braga, H. K. Al Jassar, M. M. Sharma, M. L. Duldig, J. E. Humble, I. Sabbah, P. Evenson, P. -S. Mangeard, T. Kuwabara, D. Ruffolo, A. Sáiz, W. Mitthumsiri, **W. Nuntiyakul**, and J. Kóta. “Large-amplitude Bidirectional Anisotropy of Cosmic-Ray Intensity Observed with Worldwide Networks of Ground-based Neutron Monitors and Muon Detectors in 2021 November”. In: *Astrophysical Journal* 938.1, 30 (Oct. 2022), p. 30.  DOI: 10.3847/1538-4357/ac91c5. arXiv: 2209.05743 [astro-ph.HE].







- 4 K. Chaiwongkhot, D. Ruffolo, W. Yamwong, J. Prabket, P. -S. Mangeard, A. Sáiz, W. Mitthumsiri, C. Banglieng, E. Kittiya, **W. Nuntiyakul**, U. Tippawan, M. Jitpukdee, and S. Aukkaravittayapun. "Measurement and simulation of the neutron propagation time distribution inside a neutron monitor". In: *Astroparticle Physics* 132, 102617 (Nov. 2021), p. 102617. [DOI](#): 10.1016/j.astropartphys.2021.102617. arXiv: 2106.01027 [astro-ph.IM].
- 5 S. Khamphakdee, P. Jiang, P. Chuanraksasat, **W. Nuntiyakul**, D. Ruffolo, A. Sáiz, P. Evenson, K. Munakata, J. Madsen, B. Soonthorntham, S. Komonjinda, and R. Macatangay. "Preliminary analysis of the Changvan neutron monitor operation in latitude surveys during 2019-2020". In: *Journal of Physics Conference Series* 1719, 012010 (Jan. 2021), p. 012010. [DOI](#): 10.1088/1742-6596/1719/1/012010.
- 6 A. Pagwhan, A. Zingsheim, **W. Nuntiyakul**, A. Sáiz, P. -S. Mangeard, D. Ruffolo, P. Evenson, and J. Madsen. "Monte-Carlo simulation of the response of bare neutron counters at the South Pole to vertical secondary particles from cosmic rays". In: *Journal of Physics Conference Series* 1719, 012008 (Jan. 2021), p. 012008. [DOI](#): 10.1088/1742-6596/1719/1/012008.
- 7 M. Phetra, K. Asanok, T. Hirota, B. H. Kramer, K. Sugiyama, and **W. Nuntiyakul**. "Short time flux variability of water masers in W49 N using KaVA data". In: *Journal of Physics Conference Series* 1719, 012007 (Jan. 2021), p. 012007. [DOI](#): 10.1088/1742-6596/1719/1/012007.
- 8 P. Yakum, P. Jiang, P. Chuanraksasat, **W. Nuntiyakul**, D. Ruffolo, A. Sáiz, C. Banglieng, P. Evenson, K. Munakata, J. Madsen, B. Soonthorntham, S. Komonjinda, and R. Macatangay. "Preliminary analysis of neutron time-delay histograms from Changvan latitude surveys". In: *Journal of Physics Conference Series* 1719, 012006 (Jan. 2021), p. 012006. [DOI](#): 10.1088/1742-6596/1719/1/012006.
- 9 K. Fongsamut, P. Jiang, **W. Nuntiyakul**, A. Sáiz, D. Ruffolo, P. S. Mangeard, P. Evenson, K. Munakata, J. Madsen, P. Chuanraksasat, B. Soonthorntham, S. Komonjinda, and R. Macatangay. "Preliminary FLUKA simulations of the Changvan Neutron Monitor". In: *Journal of Physics Conference Series* 1719, 012004 (Jan. 2021), p. 012004. [DOI](#): 10.1088/1742-6596/1719/1/012004.
- 10 Y Tangjai, A Pagwhan, **W. Nuntiyakul**, D Ruffolo, J W Bieber, J Clem, P S Mangeard, R Pyle, A Sáiz, and IceCube Collaboration. "Preliminary analysis of ice Cherenkov detector operation during a latitude survey". In: *Journal of Physics: Conference Series* 1719.1 (Jan. 2021), p. 012005. [DOI](#): 10.1088/1742-6596/1719/1/012005.
- 11 S. Madlee, W. Mitthumsiri, D. Ruffolo, S. Digel, and **W. Nuntiyakul**. "First Analysis of Earth's Stratospheric γ -Ray Emission in Geographical Coordinates With Fermi LAT". In: *Journal of Geophysical Research (Space Physics)* 125.9, e28151 (Sept. 2020), e28151. [DOI](#): 10.1029/2020JA028151.
- 12 **W. Nuntiyakul**, P. -S. Mangeard, D. Ruffolo, P. Evenson, J. W. Bieber, J. Clem, A. Hallgren, J. Madsen, R. Pyle, A. Sáiz, and S. Tilav. "Direct Determination of a Bare Neutron Counter Yield Function". In: *Journal of Geophysical Research (Space Physics)* 125.4, e27304 (Apr. 2020), e27304. [DOI](#): 10.1029/2019JA027304.
- 13 M. Phetra, K. Asanok, T. Hirota, B. H. Kramer, K. Sugiyama, and **W. Nuntiyakul**. "Classifying Maser features with Fortran and shell script for proper motion study of Water masers in W49N". In: *Journal of Physics Conference Series* 1380, 012055 (Nov. 2019), p. 012055. [DOI](#): 10.1088/1742-6596/1380/1/012055.
- 14 **W. Nuntiyakul**, A. Sáiz, D. Ruffolo, P. -S. Mangeard, P. Evenson, J. W. Bieber, J. Clem, R. Pyle, M. L. Duldig, and J. E. Humble. "Bare Neutron Counter and Neutron Monitor Response to Cosmic Rays During a 1995 Latitude Survey". In: *Journal of Geophysical Research (Space Physics)* 123.9 (Sept. 2018), pp. 7181-7195. [DOI](#): 10.1029/2017JA025135.
- 15 P. -S. Mangeard, D. Ruffolo, A. Sáiz, **W. Nuntiyakul**, J. W. Bieber, J. Clem, P. Evenson, R. Pyle, M. L. Duldig, and J. E. Humble. "Dependence of the neutron monitor count rate and time delay distribution on the rigidity spectrum of primary cosmic rays". In: *Journal of Geophysical Research (Space Physics)* 121.12 (Dec. 2016), pp. 11, 620-11, 636. [DOI](#): 10.1002/2016JA023515.

- 16 N. Aiensa-ad, D. Ruffolo, A. Sáiz, P. -S. Mangeard, T. Nutaro, **W. Nuntiyakul**, N. Kamyam, T. Khumlumlert, H. Krüger, H. Moraal, J. W. Bieber, J. Clem, and P. Evenson. “Measurement and simulation of neutron monitor count rate dependence on surrounding structure”. In: *Journal of Geophysical Research (Space Physics)* 120.7 (July 2015), pp. 5253–5265. [DOI: 10.1002/2015JA021249](#).
- 17 **W. Nuntiyakul**, P. Evenson, D. Ruffolo, A. Sáiz, J. W. Bieber, J. Clem, R. Pyle, M. L. Duldig, and J. E. Humble. “Latitude Survey Investigation of Galactic Cosmic Ray Solar Modulation during 1994-2007”. In: *Astrophysical Journal* 795.1, 11 (Nov. 2014), p. 11. [DOI: 10.1088/0004-637X/795/1/11](#).








Conference Proceedings

- 1 Alejandro Sáiz, Ekawit Kittiya, **Waraporn Nuntiyakul**, Achara Seripienlert, Paul Evenson, David Ruffolo, and Suyeon Oh. “Cosmic ray flux correlation between McMurdo and Jang Bogo neutron monitor stations vs. time lag”. In: *44th COSPAR Scientific Assembly. Held 16-24 July*. Vol. 44. July 2022, p. 1054.
- 2 Paul Evenson, John Clem, Pierre-Simon Mangeard, **Waraporn Nuntiyakul**, David Ruffolo, Alejandro Sáiz, Achara Seripienlert, and Surujhdeo Seunarine. “Detecting Complex Interactions in a Neutron Monitor”. In: *44th COSPAR Scientific Assembly. Held 16-24 July*. Vol. 44. July 2022, p. 1049.
- 3 Pierre-Simon Mangeard, John Clem, Paul Evenson, **Waraporn Nuntiyakul**, David Ruffolo, Alejandro Sáiz, Achara Seripienlert, and Surujhdeo Seunarine. “Multiple interactions in a Neutron Monitor”. In: *EGU General Assembly Conference Abstracts*. EGU General Assembly Conference Abstracts. May 2022, EGU22-6352, EGU22-6352. [DOI: 10.5194/egusphere-egu22-6352](#).
- 4 Ekawit Kittiya, **Waraporn Nuntiyakul**, Achara Seripienlert, Paul Evenson, Alejandro Saiz, David Ruffolo, and Sueyon Oh. “Cosmic Ray Flux Correlation between McMurdo and Jang Bogo Neutron Monitor Stations vs. Time Lag”. In: *EGU General Assembly Conference Abstracts*. EGU General Assembly Conference Abstracts. May 2022, EGU22-4215, EGU22-4215. [DOI: 10.5194/egusphere-egu22-4215](#).
- 5 K. Chaiwongkhot, D. Ruffolo, W. Yamwong, J. Prabket, P. S. Mangeard, A. Sáiz, W. Mitthumsiri, C. Banglieng, E. Kittiya, **W. Nuntiyakul**, U. Tippawan, M. Jitpukdee, and S. Aukkaravittayapun. “Measurement and Simulation of the Neutron Travel Time Distribution inside a Neutron Monitor”. In: *37th International Cosmic Ray Conference*. Mar. 2022, 1277, p. 1277. [DOI: 10.22323/1.395.01277](#).
- 6 K. Poopakun, **W. Nuntiyakul**, D. Ruffolo, P. Evenson, J. Peng, P. Chuanraksasat, M. Duldig, J. Humble, and S. Oh. “Solar magnetic polarity effect on neutron monitor count rates from latitude surveys versus Antarctic stations”. In: *37th International Cosmic Ray Conference*. Mar. 2022, 1268, p. 1268. [DOI: 10.22323/1.395.01268](#).
- 7 N. Buatthaisong, D. Ruffolo, A. Sáiz, C. Banglieng, W. Mitthumsiri, T. Nutaro, and **W. Nuntiyakul**. “Diurnal anisotropy enhancement due to non-local effects of coronal mass ejections”. In: *37th International Cosmic Ray Conference*. Mar. 2022, 1262, p. 1262. [DOI: 10.22323/1.395.01262](#).
- 8 P. Yakum, S. Khamphakdee, **W. Nuntiyakul**, D. Ruffolo, P. Evenson, P. S. Mangeard, A. Sáiz, C. Banglieng, A. Seripienlert, P. Jiang, P. Chuanraksasat, K. Munakata, J. Madsen, B. Soonthornthum, and S. Komonjinda. “Response functions of semi-leaded neutron monitor count rates and leader rates from latitude surveys during 2019-2020”. In: *37th International Cosmic Ray Conference*. Mar. 2022, 1251, p. 1251. [DOI: 10.22323/1.395.01251](#).
- 9 A. Pagwhan, **W. Nuntiyakul**, A. Seripienlert, P. Evenson, P. S. Mangeard, A. Sáiz, D. Ruffolo, and S. Seunarine. “Determination of Yield Functions of Neutron Counters at the South Pole from Monte-Carlo Simulation”. In: *37th International Cosmic Ray Conference*. Mar. 2022, 1246, p. 1246. [DOI: 10.22323/1.395.01246](#).
- 10 A. Seripienlert, **W. Nuntiyakul**, S. Khamphakdee, P. S. Mangeard, A. Sáiz, D. Ruffolo, K. Fongsamut, P. Jiang, P. Chuanraksasat, P. Evenson, K. Munakata, J. Madsen, B. Soonthornthum, and S. Komonjinda. “Validation of Monte Carlo Yield Function of a Semi-Leaded Neutron Monitor using Latitude Survey

Data in 2019 and 2020". In: *37th International Cosmic Ray Conference*. Mar. 2022, 1243, p. 1243.  DOI: 10.22323/1.395.01243.

- 11 **W. Nuntiyakul**, P. S. Mangeard, D. Ruffolo, P. Evenson, J. W. Bieber, J. Clem, A. Hallgren, J. Madsen, R. Pyle, A. Sáiz, and S. Tilav. "Direct Determination of a Bare Neutron Counter Yield Function". In: *37th International Cosmic Ray Conference*. Mar. 2022, 1242, p. 1242.  DOI: 10.22323/1.395.01242.
- 12 P. Evenson, J. Clem, P. S. Mangeard, **W. Nuntiyakul**, D. Ruffolo, A. Sáiz, A. Seripienlert, and S. Seunarine. "Multiple Particle Detection in a Neutron Monitor". In: *37th International Cosmic Ray Conference*. Mar. 2022, 1240, p. 1240.  DOI: 10.22323/1.395.01240.
- 13 **Waraporn Nuntiyakul**, Roger Pyle, Paul Evenson, David Ruffolo, John Clem, Pierre-Simon Mangeard, and Audcharaporn Pagwhan. "Characterizing Moderated Neutron Detectors". In: *43rd COSPAR Scientific Assembly. Held 28 January - 4 February*. Vol. 43. Jan. 2021, p.911, p. 911.
- 14 **W. Nuntiyakul**, A. Sáiz, D. Ruffolo, P. S. Mangeard, P. Evenson, J. W. Bieber, J. Clem, R. Pyle, M. Duldig, and J. Humble. "Bare Neutron Counter and Neutron Monitor Response to Cosmic Rays During a 1995 Latitude Survey". In: *36th International Cosmic Ray Conference (ICRC2019)*. Vol. 36. International Cosmic Ray Conference. July 2019, 114, p. 114.  DOI: 10.22323/1.358.0114.
- 15 N. Aiensa-ad, D. Ruffolo, A. Saiz, P. S. Mangeard, T. Nutaro, **W. Nuntiyakul**, N. Kamyam, T. Khumlumlert, H. Krüger, H. Moraal, J. W. Bieber, J. Clem, and P. Evenson. "Measurement and simulation of neutron monitors count rate dependence on surrounding structure". In: *34th International Cosmic Ray Conference (ICRC2015)*. Vol. 34. International Cosmic Ray Conference. July 2015, 220, p. 220.  DOI: 10.22323/1.236.0220.
- 16 P. S. Mangeard, D. Ruffolo, A. Saiz, **W. Nuntiyakul**, S. Madlee, T. Nutaro, J. W. Bieber, J. Clem, P. Evenson, R. Pyle, M. L. Duldig, and J. E. Humble. "Relationship between the Neutron Time Delay Distribution and the Rigidity Spectrum of Primary Cosmic Rays up to 16.8GV". In: *34th International Cosmic Ray Conference (ICRC2015)*. Vol. 34. International Cosmic Ray Conference. July 2015, 80, p. 80.  DOI: 10.22323/1.236.0080.
- 17 **W. Nuntiyakul**, P. Evenson, D. Ruffolo, A. Saiz, J. W. Bieber, J. Clem, R. Pyle, M. L. Duldig, and J. E. Humble. "Latitude survey investigation of galactic cosmic ray solar modulation during 1994-2007". In: *34th International Cosmic Ray Conference (ICRC2015)*. Vol. 34. International Cosmic Ray Conference. July 2015, 67, p. 67.  DOI: 10.22323/1.236.0067.
- 18 **W. Nuntiyakul**, P. A. Evenson, D. J. Ruffolo, A. Saiz, J. W. Bieber, J. M. Clem, R. Pyle, M. Duldig, and J. E. Humble. "Latitude Survey Investigation of Galactic Cosmic Ray Solar Modulation during 1994-2007". In: *AGU Fall Meeting Abstracts*. Vol. 2014. Dec. 2014, SH13B-4116, SH13B-4116.
- 19 Pierre-Simon Mangeard, John W. Bieber, Marcus L. Duldig, John E. Humble, Roger Pyle, Paul Evenson, David Ruffolo, Alejandro Saiz, and **Waraporn Nuntiyakul**. "Relationship between the Neutron Time Delay Distribution and the Rigidity Spectrum of Primary Cosmic Rays". In: *40th COSPAR Scientific Assembly*. Vol. 40. Jan. 2014, D1.3-23-14, pp. D1.3-23-14.

Skills

Languages	 Thai and English.
Programming Languages	 C, C++, Fortran, and basic Python.
Data Visualization	 IDL, and ROOT.
Software	 FLUKA, Flair, and Visual Basic
Graphic production	 Adobe Illustrator and Adobe Photoshop
Document	 Microsoft Office Word, Excel, PowerPoint, \LaTeX , and Acrobat Professional.
Academic	 Research, teaching, training, consultation, services, and documents (Proposal, Report, and TQF).









Professional Experience and Awards

Awards and Scholarships



- 2021  **Outstanding Teaching Award.** Awarded by Faculty of Science, Chiang Mai University.
- 2020  **New Face of Science.** Selected by the Faculty of Science at Chiang Mai University for promotion Faculty of Science.  The new faces of Science Video
- 2016  **Outstanding award for the highest-ranked qualitative and quantitative publications.** Faculty of Science, Chandrakasem Rajabhat University.
 **International Research Travel Award Program (IRTAP).** Awarded by the American Physical Society (APS).
- 2014  **Max Hammond Award.** Awarded by 47th Annual American Geophysical Union Fall Meeting (AGU), San Francisco, USA.
 **Outstanding Oral Presentation Award.** Awarded by RGJ-Ph. D. Congress XV, Pattaya.
- 2013  **The 2nd Outstanding Poster.** Awarded by the committee on Space Research and the organizers of the first COSPAR Symposium, Bangkok.
- 2011 – 2013  **Royal Golden Jubilee Ph. D. Program (RGJ).** Awarded by the Thailand Research Fund (TRF), Bangkok.
- 2010  **Received a Teaching Assistant scholarship** from Faculty of Science, Mahidol University.
- 2009  **Received a Research Assistantship** from the Thailand Center of Excellence in Physics (ThEP), Chiang Mai.
 **Outstanding Researcher of Invention Awards.** Awarded by Chandrakasem Rajabhat University, Bangkok.
- 2006  **Graduate Thesis International Conference Awards on Applied Science (ICAS 2006) at Don Chan Palace, Vientiane, Lao PDR on November 5-7, 2006** Awarded by Faculty of Graduate Studies, Kasetsart University, Bangkok.
- 2004  **Outstanding Physics Student with the Highest GPA Awards in Master Degree.** Awarded by Professor Taeb Nilanithi Foundation, Bangkok.
- 2003  **Received a Teaching Assistant scholarship** from Faculty of Science, Kasetsart University, Bangkok.
 **Outstanding Physics Student with the Highest GPA Awards in Bachelor Degree.** Awarded by Professor Taeb Nilanithi Foundation, Bangkok.
- 2002  **Outstanding Physics Student with the Highest GPA Awards 2002.** Awarded by Bruce Scott Prize, Nakhonpathom.
- 2001  **UCE Cultural Exchange Student at Derby College in Derby England from Oct 11, 2002, to Oct 31, 2002.** Awarded by UNIVERSAL CULTURAL EXCHANGE.
- 2000  **Outstanding Physics Student with the Highest GPA throughout Academic Year 2000.** Awarded by Faculty of Science, Silpakorn University, Nakhonpathom.

Professional Experience and Awards (continued)












Research Grants

- 2023 – 2024  **Program Management Unit for Human Resources & Institutional Development, Research and Innovation (PMU-B): High Caliber Impact Oriented Researchers.**
Project title: *Building a world-leading network of IceCube Neutrino Observatory for high-energy particles from space.*
Position: Principal Investigator (PI)
Budget: 4,000,000 Baht
-  **Program Management Unit for Human Resources & Institutional Development, Research and Innovation (PMU-B): High Caliber Impact Oriented Researchers (Earth Space System).**
Project title: *Science and technology of measuring high energy particles and plasma in space.*
Position: Co-Investigator
Budget: 4,000,000 Baht
- 2022 – 2024  **National Research Council of Thailand (NRCT) and National Science and Technology Development Agency (NSTDA).**
Project title: *Space Radiation Science and Technology.*
Position: Co-Investigator
Budget: 14,977,000 Baht
- FY 2021 – 2023  **Chiang Mai University.**
Project title: *Latitude survey with the Changvan neutron detector and a collaborative network of high-energy particle physics research from space.*
Position: Principal Investigator (PI)
Budget: 3,567,127 Baht
-  **National Astronomical Research Institute of Thailand (NARIT).**
Project title: *Latitude survey of geomagnetic cutoff rigidity and space telescope detection.*
Position: Co-Principal Investigator
Budget: 4,913,200 Baht
- FY 2020  **National Astronomical Research Institute of Thailand (NARIT).**
Project title: *Latitude Survey: Monte Carlo Simulation and Data Analysis from Ship-Borne Neutron Monitory.*
Position: Co-Principal Investigator
Budget: 1,807,000 Baht
- 2019 – 2022  **Senior Researcher Award Grant from Thailand Science Research and Innovation.**
Project title: *Space Physics.*
Position: Co-Investigator
Budget: 7,500,000 Baht
- 2019 – 2021  **TRF-MRG Research Grant for New Scholar (MRG6280155) from Thailand Research Fund (TRF).**
Project title: *Response Functions of Neutron Monitors to Cosmic Rays as Measured during Ocean Voyages to Antarctica.*
Position: Principal Investigator (PI)
Budget: 578,000 Baht




Professional Experience and Awards (continued)

- 2017 – 2019  **TRF-MRG Research Grant for New Scholar (MRG6o8oo86) from Thailand Research Fund (TRF).**
Project title: *Short-term variations of cosmic ray count rates with latitude, longitude, and time.*
Position: Principal Investigator (PI)
Budget: 540,000 Baht
- 2016 – 2019  **Senior Researcher Award Grant from Thailand Research Fund.**
Project title: *Space Plasma Physics and Cosmic Rays.*
Position: Co-Investigator
Budget: 6,790,000 Baht


International Collaborations

- 2022 – Present  **Korea Astronomy and Space Science Institute (KASI), South Korea.** For Space weather cooperation; contact with Prof. Kyung-Suk.
-  **Korea Polar Research Institute (KOPRI), South Korea.** For a collaborative latitude survey project measured cosmic rays during ocean voyages to Antarctica and the Arctic.
-  **Chonnam National University, South Korea.** For a collaborative latitude survey project measured cosmic rays during ocean voyages to Antarctica; contact with Prof. Suyeon Oh
- 2021 – Present  **University of Hawaii, USA.** For the collaborative latitude survey project; contact with Prof. Veronica Bindi.
-  **University of New Hampshire, USA.** For the collaborative latitude survey project; contact with Prof. James Ryan.
- 2020 – Present  **Wisconsin IceCube Particle Astrophysics Center (WIPAC), USA.** For IceCube Collaboration; contact with Prof. James Madsen and Prof. Albrecht Karle.
-  **University of Tasmania, Australia.** For the Mawson neutron monitor station; contact with Prof. Marc Duldig and Prof. John Humble.
- 2015 – 2019  **University of Wisconsin-River Falls (UWRF), USA.** For doing a yearly student exchange astrophysics research program between Thailand and IceCube (Neutrino Observatory) group to determine accurate response functions of South Pole detectors operated by UWRF; contact with Prof. James Madsen and Assist. Prof. Suruj Seunarine.
- 2018 – Present  **Polar Research Institute of China (PRIC), China.** For a collaborative latitude survey project measured cosmic rays during ocean voyages to Antarctica; contact with Prof. Peng Jiang.
-  **Shinshu University, Japan.** For the collaborative latitude survey project and muon detector network; contact with Prof. Kazuoki Munakata.
- 2015 – Present  **University of Delaware, USA.** For collaborative neutron monitor research and Ice-Top tank; contact with Prof. Paul Evenson, Dr. Pierre-Simon Mangeard, and Dr. Serap Tilav.

Academic Service Activities

- 2021 – Present  **Steering Committee.** The SCAR Scientific Research Programme Astronomy & Astrophysics from Antarctica (SCAR AAA).
-  **Associated membership.** IceCube collaboration.
-  **Secretary and Committee.** Thai-Antarctic Neutrino Observatory (TANO).

Professional Experience and Awards (continued)

- 2023  **Invited Instructor in Session “Virtual Reality Experience”, 1st Thai IceCube VR Experience, Bangkok, March 15-16, 2023.**
- 2022  **Visiting Wisconsin IceCube Particle Astrophysics Center: WIPAC, 1 June to 31 July, 2022.**
-  **Invited Instructor. 6th Neutron and Neutrino Detector Bootcamp, Chiang Mai, December 22-27, 2022.**
-  **Invited Instructor. ThaisCube, Chiang Mai, September 6-9, 2022.**
- 2021  **Invited Instructor. 5th Neutron Monitor Bootcamp, Chiang Mai, December 24-29, 2021.**
-  **Examination Creator for Police Candidates in Forensic Science. Royal Thai Police, December 3-6, 2021**
- 2020  **Invited Instructor. Post Neutron Monitor Bootcamp, Chiang Mai, December 24-27, 2020.**
-  **Invited Instructor in Session “Particles Simulation and Applications to Research”, 3rd Neutron Monitor Bootcamp, Songkhla, July 27-31, 2020.**
- 2015 – 2019  **Visiting Professor at University of Wisconsin-River Fall.**
- 2019  **Invited Instructor. 2nd Neutron Monitor Bootcamp, Chiang Mai, December 21-24, 2019.**
- 2018  **Invited Instructor. 1st Neutron Monitor Bootcamp, Chiang Mai, December 20-24, 2018.**
- 2017  **Marker in International Olympiad on Astronomy and Astrophysics 2017 (IOAA). Phuket, Thailand November 12-21, 2017**
- 2016  **Head and Trainer in Annually Stargazing Project. Nakhon Ratchasima, March, 2016**
-  **STEM Ambassador in Thailand.**
- 2015  **Chairman in the session of Physics, Earth Science and Applied Physics of the International Conference on Science and Technology (TICST2015), Rajamangala University of Technology Thanyaburi, November 4-6, 2015**
-  **Reviewer of Science and Technology RMUTT Journal, ISSN: 2229-1547 (publication certified by TCI (the 1st group)), Rajamangala University of Technology Thanyaburi, November 4-6, 2015**
-  **Examination Creator for Police Candidates in Forensic Science. Royal Thai Police, February 12-15, 2015**
-  **A Judge of invention award in Inventors’ Day. Chandrakasem Rajabhat University, February 2, 2015**
-  **Head and Trainer in Annually Stargazing Project. Chaing Rai, January 30 to February 1, 2015**
- 2014  **Trainer in Secondary School Teachers in Session “Fundamental Physics”, Chandrakasem Rajabhat University in Chai-Nat Province, August 15-17, 2014.**
- 2014 – 2021  **Marker in the National Astronomy Olympiad.**
- 2013  **Trainer in Training Session “Monte Carlo Simulation of Secondary Cosmic Rays in Earth’s Atmosphere”. 1st COSPAR Symposium, Bangkok, November 11-15, 2013**
-  **Trainer in Demonstration Session, “Neutron measurements from Space”, 2nd Thailand Experimental Particle Physics Novice Workshop, Mahidol University, March 25-29, 2013**

Professional Experience and Awards (continued)

2010 – 2013

📌 **Trainer in Open House “Cosmic Rays and Space Weather”.** Faculty of Science, Mahidol University

References

Prof. Paul Evenson

Department of Physics and Astronomy,
Bartol Research Institute,
University of Delaware
217 Sharp Lab, Newark, Delaware 19716, USA
✉ evenson@udel.edu

Prof. James Madsen

Wisconsin IceCube Particle Astrophysics Center
(WIPAC)
222 West Washington Ave., Suite 500 Madison,
WI 53703, USA
✉ jim.madsen@icecube.wisc.edu