

Dr.techn.Marzuki

contact

Atmospheric Physics
 Research Group
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languages

English fluency
 Japanese and Deutsch

programming

♥ Matlab
 C, Fortran, NCL
 L^AT_EX

skills

Modeling of electromagnetic wave propagation in rain medium, radar and satellite meteorology data analysis, disdrometer operation and maintenance.

experience

university service:

- 2015–Now **Andalas University** Padang, Indonesia
Head of Physics Department
 Provide leadership and create enthusiasm for teaching among members of the department, to develop team work and balance the strengths of individuals, allocating responsibilities as appropriate. The main duty is also to define and develop departmental policy, priorities and schemes of work regularly and to monitor their implementation, setting department targets as necessary, working within the aims of the department and in line with educational developments nationally.
- 2013–2015 **Andalas University** Padang, Indonesia
Secretary of Physics Department
 Help the head of department to organize and run the department. I also served as the leader for the administrative team of department.
- 2005–2007 **Andalas University** Padang, Indonesia
Non-regular Program Coordinator
 Help the head of department to coordinate and organize the non-regular program of Physics Department.

research and teaching service:

- 2002–Now **Andalas University** Padang, Indonesia
Lecturer
 Teach and supervise students as well as conducting research in field of atmospheric physics and related sciences.
- 2011–2013 **Kyoto University** Kyoto, Japan
Postdoctoral researcher
 Conducted a research project in field of land-sea contrast of precipitation over Indonesia through remote sensing network observation.
- 2010–2011 **Technical University of Graz** Graz, Austria
Research Assistant
 Conducted a research project in field of interaction of electromagnetic wave and rain particularly based on the 2D-video disdrometer observation.

accreditation, curriculum development, quality assurance:

- 2016 **Andalas University** Padang, Indonesia
Team Leader of Accreditation
Organized and led accreditation team to prepare the accreditation for undergraduate program. The undergraduate program has been accredited "A" by National Accreditation Board for Higher Education (BAN-PT) since June 2016.
- 2015 **Center for quality assurance of Andalas University** Padang, Indonesia
Trainee
Center for quality assurance (LP3M) Unand held the Training of Internal Quality Assurance System (SPMI) and Internal Quality Audit (AMI) in July 2015. This training aims to (1) provide knowledge and the ability for participants to implement and develop SPMI in their institution, (2) provide knowledge and skills to participants to prepare the document for the quality assurance of the university, faculty and departments; (3) provides the knowledge and skills of the participants to carry out internal quality audits.
- 2014 **Andalas University** Padang, Indonesia
Member of curriculum development team
Collected the suggestion from the stakeholder for strengthening the curriculum of undergraduate and graduate programs.

education

- 2007–2011 **Dr. techn.** in Technical Science (Electrical Engineering) (Emphasis in Radar and Microwave Propagation) Technical University of Graz, Austria
- 2003–2005 **M.Sc.Eng.** in Electronic and Control System Engineering (Emphasis in Remote Sensing for Atmosphere) Shimane University, Japan
- 1998–2002 **B.Sc.** in Physics Andalas University, Padang

other qualifications

- 2017 **Training and Certification for national reviewer of competitive research proposal** Indonesian Ministry of Research, Technology and Higher Education.
- 2016 **Training and Certification for assessor** of National Accreditation Board for Higher Education of Indonesian Ministry of Research, Technology and Higher Education.
- 2015 **Training for national reviewer of competitive research proposal** Indonesian Ministry of Research, Technology and Higher Education.
- 2013 **Training for Applied Approach (AA)** LP3M Andalas University
- 2007 **Training for PEKERTI** LP3M Andalas University

awards

- 2016 **Best lecturer** Faculty of Mathematics and Natural Sciences
As part of the 61st anniversary celebrations of Faculty of Mathematics and Natural Sciences.
- 2016 **Best head of department** Faculty of Mathematics and Natural Sciences
As part of the selection of best head of department in the annual program of Indonesian Ministry of Research, Technology and Higher Education.
- 2016 **Best lecturer** Student Executive Board Andalas University (BEM KM UNAND)
BEM-KM UNAND selected several lecturers for the 2016 UNAND award in series of the 2016 Andalas week event. One of the category is best lecturer.
- 2011-2013 **Postdoctoral fellowship** Japan Society for the Promotion of Science (JSPS)
JSPS Fellowship Programs for Overseas Researchers aims to allow me to advance my own research in Kyoto University while contributing to the progress of research in Japan and Indonesia.
- 2007-2011 **Doctoral fellowship** The Scholarship Foundation of the Republic of Austria
Three years scholarship from ASEA-UNINET for doctoral program at Technical University of Graz. The scholarship supports the exchange of knowledge between partner universities in the member countries in Europe and South-East Asia (Indonesia, Malaysia, Philippines, Thailand and Vietnam).
- 2003-2005 **Master fellowship** Japan Ministry of Education, Culture, Sports, Science, and Technology
Two years scholarship from Japan Ministry of Education, Culture, Sports, Science, and Technology (MEXT) for master program at Shimane University, Japan.

professional memberships

- 2005–now **Member** of Indonesian Physical Society
- 2013–now **Member** of Europe Geophysical Union (EGU)
- 2011–now **Member** of Japan Geoscience Union (JPGU)
- 2014–now **Member** of Asia Oceania Geosciences Society

professional services

- 2016–now **Assessor** of National Accreditation Board for Higher Education of Indonesian Ministry of Research, Technology and Higher Education.
- 2015–now **Reviewer** for national competitive research proposal of Indonesian Ministry of Research, Technology and Higher Education.
- 2010–now **Reviewer** for Atmospheric Research Journal (Elsevier).
- 2010–now **Reviewer** for Progress In Electromagnetics Research Journal.
- 2010–now **Reviewer** for IEEE Transactions on Antennas and Propagation Journal.
- 2010–now **Reviewer** for IEEE Geoscience and Remote Sensing Letters.
- 2015–now **Reviewer** for Remote Sensing Applications: Society and Environment.
- 2014–now **Reviewer** for Natural Hazards Journal.

interests

teaching: electromagnetic wave, radar and tropical meteorology, atmospheric physics, remote sensing
research: remote sensing (e.g., radar and satellite meteorology), cloud and precipitation physics, global hydrologic cycle, climate change, interaction between earthquake and atmosphere.

research sponsors

Indonesia: Indonesian Ministry of Research, Technology and Higher Education, Andalas University
international: Collaborative Research based on the MU Radar and Equatorial Atmosphere Radar (EAR), Research Institute for Sustainable Humanosphere, Kyoto University.

publications

Peer-reviewed journal:

- Kozu, T., Shimomai, T., Akramin, Z., Marzuki, Shibagaki, Y., and Hashiguchi, H.: Intraseasonal variation of raindrop size distribution at Koto Tabang, West Sumatra, Indonesia, *Geophys. Res. Lett.*, 32, L07803, doi:10.1029/2004GL022340, 2005.
- Marzuki, Kozu, T., Shimomai, T., Randeu, W. L., Hashiguchi, H., and Shibagaki, Y.: Diurnal variation of rain attenuation obtained from measurement of raindrop size distribution in equatorial Indonesia, *IEEE Trans. Ant. Propag.*, 57, 1191-1196, 2009.
- Marzuki, M., Randeu, W. L., Schoenhuber, M., Bringin, V. N., Kozu, T. and Shimomai, T.: Raindrop size distribution parameters of distrometer data with different bin sizes, *IEEE Trans. Geosci. Remote Sens.* 48, 3075–3080, 2010.
- Marzuki, M., Walter L Randeu, Franz Teschl, Michael Schonhuber, Wendi Harjupa, Complex Permittivity Measurements of Rainwater in the 0.5–26.5 GHz Frequency Range, *IEEE Geoscience and Remote Sensing Letters*, Vol. 7, pp. 487-490, 2010.
- Muhammad SALEEM AWAN, Erich LEITGEB, MARZUKI, Thomas PLANK, A Study of Fog Characteristics using Free-Space Optical Wireless Links, *Radioengineering*, Vol. 19, No. 2, June 2010.
- Muhammad Saeed Khan, Muhammad Saleem AWAN, Sajid SHEIKH MUHAMMAD, Muhammad FAISAL, Marzuki, Farukh NADEEM, Erich LEITGEB, Probabilistic model for free-space optical links under continental fog conditions, *Radioengineering*, VOL. 19, NO. 3, SEPTEMBER 2010.
- Marzuki, Kozu, T., Shimomai, T., Randeu, W. L., Hashiguchi, H., and Vonnisa, M.: Raindrop size distributions of convective rain over equatorial Indonesia during the first CPEA campaign, *Atmos. Res.*, 96, 645-655, 2010.
- Marzuki, Randeu, W. L., Kozu, T., Shimomai, T., Schoenhuber, M. and Hashiguchi, H.: Estimation of raindrop size distribution parameters by maximum likelihood and L-moment methods: Effect of discretization, *Atmos. Res.*, 112, 1-11, 2012.
- Marzuki, M., Hashiguchi, H., Yamamoto, M. K., Mori, S., and Yamanaka, M. D.: Regional variability of raindrop size distribution over Indonesia, *Ann. Geophys.*, 31, 1941-1948, doi:10.5194/angeo-31-1941-2013, 2013.
- Marzuki, Hashiguchi, H., Yamamoto, M. K., Yamamoto, M., Mori, S., Yamanaka, M. D., Carbone, R. E., and Tuttle, J. D.: Cloud episode propagation over the Indonesian Maritime Continent from 10 years of infrared brightness temperature observations, *Atmos. Res.*, 120-121, 268-286, 2013.
- Marzuki, Randeu, W. L., Kozu, T., Shimomai, T., Hashiguchi, H., and Schoenhuber, M.: Raindrop axis ratios, fall velocities and size distribution over Sumatra from 2D-Video Disdrometer measurement, in: Michaelides, S. (Eds.) *Advances in Precipitation Science*, *Atmos. Res.*, 119, 23-37, 2013.
- Hiroyuki Hashiguchi, Yoshikazu Tabata, Masayuki K. Yamamoto, Marzuki, Shuichi Mori, Manabu D. Yamanaka, Fadli Syamsudin, Timbul Manik, 2013, Observational study on diurnal precipitation cycle over Indonesian maritime continent, *Journal of Disaster Research* 8 (1), 137-138.
- Marzuki, Hashiguchi, H., Kozu, T., Shimomai, T., Shibagaki, Y., Takahashi, Y., 2016, Precipitation Microstructure in Different Madden–Julian Oscillation Phases over Sumatra, *Atmospheric Research*, Vol. 168, pp. 121-138.
- Rahayu, A., Marzuki, Vonnisa, M., 2016, Statistical Properties of Cloud Propagation over Sumatra during CPEA-I, *Makara Journal of Science*, Vol. 20, No. 4, pp. 181-192.

- Indrayani, W., Marzuki, Vonnisa, M., 2016, Estimation of Raindrop Size Distribution Parameters Using Rain Attenuation Data of Ku-Band Communications Satellite, *Makara Journal of Science*, Vol 20, No 3, pp. 145-154.
- Marzuki, Hashiguchi, H., Shimomai, T., and Randeu, W. L., 2016, Cumulative Distribution of Rainfall Rate over Sumatra, *Progress In Electromagnetics Research M*, Vol. 49, pp. 1-8
- Marzuki, Hashiguchi, H., Shimomai, T., Rahayu, I., Vonnisa, M., and Afdal, 2016, Performance evaluation of Micro Rain Radar over Sumatra through comparison with disdrometer and wind profiler, *Progress In Electromagnetics Research M*, Vol. 50, pp.33-46.
- Marzuki, Vonnisa, M., Rahayu, A., Hashiguchi, H., 2017, Cloud Statistics over the Indonesian Maritime Continent during the First and the Second CPEA Campaigns, *Atmospheric Research*, Vol. 189, 1 June 2017, Pp. 99–110.
- Nauval, F., Marzuki, H, Hashiguchi, 2017, Regional and Diurnal Variations of Rain Attenuation Obtained from Measurement of Raindrop Size Distribution over Indonesia at Ku, Ka and W Bands, *Progress In Electromagnetics Research M*, Vol. 57, 25-34.

International seminars:

- Marzuki, T. Kozu, T. Shimomai, Y. Fujiyoshi, Zainul Akramin. Vertical Profile of Precipitation from Zenith-Looking Radars at Koto Tabang, West Sumatra. *Nippon Kisho Gakkai* 2004.
- Marzuki, Toshiaki Kozu, Toyoshi shimomai, Zainul Akramin, Hiroyuki Hashiguchi, Y. Fujiyoshi. The influence of intraseasonal variation on vertical profile of reflectivity (VPR) as inferred from zenith looking radars at Koto Tabang, west Sumatra. *The Meteorological Society of Japan Meeting* 2005.
- Marzuki, Toshiaki Kozu, Toyoshi Shimomai. Raindrop size distributions of tropical precipitation over West Sumatera ISAP 2006, Singapore.
- Marzuki, Wizri Yasir, Toshiaki Kozu, Toyoshi shimomai. Characteristics of Cloud Vertical Structure in West Sumatra Derived from Radiosonde Soundings International Conference on Mathematics and Natural Sciences (ICMNS), Bandung November 2006.
- GJ Huang, VN Bringi, M Schönhuber, M Thurai, T Shimomai, T Kozu, M Marzuki, W Harujpa. Drop shape and canting angle distributions in rain from 2-D video disdrometer, 33rd Conference on Radar Meteorology; Australia 08/2007.
- M.S. Awan, E. Leitgeb, S.S. Muhammad, Marzuki, F. Nadeem, M.S. Khan, C. Capsoni. Distribution function for continental and maritime fog environments for optical wireless communication. *Communication Systems, Networks and Digital Signal Processing*, 2008. CNSDSP 2008. 6th International Symposium on; 08/2008.
- M.S. Awan, C. Capsoni, E. Leitgeb, R. Nebuloni, Marzuki, F. Nadeem, M.S. Khan. FSO-Relevant New Measurement Results under Moderate Continental Fog Conditions at Graz and Milan. *Advanced Satellite Mobile Systems*, 2008. ASMS 2008.
- M.S. Awan, E. Leitgeb, C. Capsoni, R. Nebuloni, Marzuki, F. Nadeem, M.S. Khan. Attenuation Analysis for Optical Wireless Link Measurements under Moderate Continental Fog Conditions at Milan and Graz. *Vehicular Technology Conference*, 2008. VTC 2008-Fall. IEEE 68th; 10/2008.
- M.S. Awan, E. Leitgeb, Marzuki, M.S. Khan, F. Nadeem, C. Capsoni. Evaluation of fog attenuation results for optical wireless links in free space. *Satellite and Space Communications*, 2008. IWSSC 2008. IEEE International Workshop on; 11/2008.
- M.S. Awan, Marzuki, E. Leitgeb, F. Nadeem, M.S. Khan, C. Capsoni. Weather Effects Impact on the Optical Pulse Propagation in Free Space. *Vehicular Technology Conference*, 2009. VTC Spring 2009. IEEE 69th; 05/2009.
- M.S. Awan, Marzuki, E. Leitgeb, B. Hillbrand, F. Nadeem, M.S. Khan. Cloud attenuations for free-space optical links. *Satellite and Space Communications*, 2009. IWSSC 2009. International Workshop on; 10/2009.
- Muhammad Saleem Awan, Marzuki, Erich Leitgeb, Muhammad Saeed Khan. Optical attenuation modeling of continental fog using exponential distribution. *Proceedings of the 7th International Symposium on Communication Systems Networks and Digital Signal Processing*, CNSDSP 2010, University of Northumbria at Newcastle, UK, 21-23 July 2010.

- Marzuki, W. L. Randeu, T. Kozu, T. Shimomai, H. Hashiguchi, M. Schoenhuber. Variability of raindrop size distribution over Sumatra and its effect on the Z-R relationship. In proceeding of: EGU General Assembly 2010.
- Marzuki, Walter L. Randeu, Toshiaki Kozu, Toyoshi Shimomai, Hiroyuki Hashiguchi. Effect of Rain Type on Rain Attenuation Modeling at a Tropical Location. 12th URSI Commission F Triennial Open Symposium on RadioWave Propagation and Remote Sensing; 03/2011.
- Marzuki, Hiroyuki Hashiguchi, Masayuki Yamamoto, M.D. Yamanaka, Suichi Mori. Variability of Precipitation Propagation over Indonesia Based on MTSAT-IR, TRMM and Wind Profiler Network Observations, The Meteorology Society of Japan 2011.
- Marzuki, Hiroyuki Hashiguchi, M.K.Yamamoto, M.D.Yamanaka, S.Mori, Statistical Analysis of the Tropical Intraseasonal Oscillation Based on Anomalies of Outgoing Longwave Radiation (OLR) in 1980-2010, The Meteorology Society of Japan 2012 Spring Meeting.
- Marzuki, Hiroyuki Hashiguchi, Masayuki Yamamoto, Toshiaki Kozu, Toyoshi Shimomai, Manabu D. Yamanaka, Suichi Mori, Raindrop size distribution observations with Parsivel and Micro Rain Radar (MRR) over Sumatra, Japan Geoscience Union Meeting 2012.
- Marzuki, Hiroyuki Hashiguchi, Masayuki Yamamoto, Manabu D. Yamanaka, Suichi Mori, Large scale influence on precipitation propagation over Indonesia, Japan Geoscience Union Meeting 2012.
- Marzuki, Hiroyuki Hashiguchi, Masayuki Yamamoto, Manabu D. Yamanaka, Suichi Mori, J.D.Tuttle, Cloud Propagation Study over Indonesia by Adopting Tracking Radar Echo by Correlation (TREC) Method, The meteorology Society of Japan 2012 Autumn Meeting.
- Marzuki, Hiroyuki Hashiguchi, Masayuki Yamamoto, Manabu D. Yamanaka, Suichi Mori, Raindrop Size Distribution Measurements Along Equatorial Indonesian Maritime Continent, The Meteorology Society of Japan 2012 Autumn Meeting.
- Marzuki, Hiroyuki Hashiguchi, Masayuki Yamamoto, Shuichi Mori, Manabu D. Yamanaka, Yukihiro Takahashi, Relationships among Lightning, Precipitation, and Hydrometeor Characteristics in Equatorial Indonesia, Japan Geoscience Union Meeting 2013.
- Marzuki, Hiroyuki Hashiguchi, Masayuki Yamamoto, Toshiaki Kozu, Toyoshi Shimomai, Microstructure of Precipitation in Different MJO Phases over Sumatra, Japan Geoscience Union Meeting 2013 (Proceeding).
- MARZUKI, Marzuki, HASHIGUCHI, Hiroyuki, YAMAMOTO, Masayuki, other, Microstructure of Precipitation over Indonesia from a Network of Parsivel disdrometers, Japan Geoscience Union Meeting 2014, Yokohama, Japan, 28 April 2014 – 2 May 2014 (poster).
- Marzuki, Hiroyuki Hashiguchi, Toyoshi Shimomai, T. Kozu, Y. Takahashi, Comparison of Raindrop Size Distributions in Equatorial Indonesia during Convectively Inactive and Active MJO, Japan Geoscience Union Meeting 2015, Chiba, Japan, 24-28 May 2015 (oral).
- Marzuki, Wira Indrayani, Mutya Vonnisa, Hiroyuki Hashiguchi, W. L. Randeu, T. Shimomai, T. Kozu, Y. Maekawa, Y. Shibagaki, Retrieval of Raindrop Size Distribution Parameters by Combining Rainfall Rate and Electromagnetic Wave Attenuation Data, Japan Geoscience Union Meeting 2015, Chiba, Japan, 24-28 May 2015 (poster).
- Marzuki, Aulya Rahayu, Mutya Vonnisa, 2015, Comparison of Cloud Propagation Over Sumatera During CPEA-I and II, AOGS 12th Annual Meeting, 2 to 7 Aug, 2015, Singapore, AS21-A017 (oral).
- Marzuki, Sandro Poltak, Hiroyuki Hashiguchi, Mamoru Yamamoto, Masayuki Yamamoto, Toyoshi Shimomai, Kozu T., 2015, Wavelet Analysis of Daily Precipitation Over Equatorial Indonesia, AOGS 12th Annual Meeting, 2 to 7 Aug, 2015, Singapore, AS21-A018 (poster)
- Marzuki, 2016, Variability of raindrop size distribution over Indonesia, South-East Asian School on Tropical Atmospheric Science (SEASTAS) and IWS on Extreme Weather in Changing Climate in the Maritime Continent in Bandung, Indonesia – 5-8 Jan 2016 (invited speaker).
- Marzuki, Rahayu, A., Vonnisa, M., Hashiguchi, H., 2016, Cloud Propagation over Sumatera during Coupling Processes in the Equatorial Atmosphere Campaign I and II, Japan Geoscience Union Meeting 2016, Chiba, Japan, 22-26 May 2016 (oral)

- Marzuki, Rahayu, I., Hashiguchi, H., Shimomai, T., 2016, Variability of Rain Microstructure over Sumatra from Micro Rain Radar Observation, Japan Geoscience Union Meeting 2016, Chiba, Japan, 22-26 May 2016 (poster).
- Nur Faddillah, Marzuki, Wendi Harjupa, Toyoshi Shimomai, Hiroyuki Hashiguchi, Comparison of Raindrop Size Distribution Characteristics from Maritime and Continental Clouds, International Symposium on the 15th Anniversary of the Equatorial Atmosphere Radar (EAR), August 4, 2016, Jakarta (poster).
- Indah Rahayu, Marzuki, Hiroyuki Hashiguchi, Toyoshi Shimomai, Vertical Structure of Raindrop Size Distribution at Kototabang as Retrieved by Micro Rain Radar, International Symposium on the 15th Anniversary of the Equatorial Atmosphere Radar (EAR), August 4, 2016, Jakarta (poster).
- Ulfa Azmi and Marzuki, Vertical Distribution of Carbon Monoxide over Sumatera during the 2015 Forest Fires as Inferred from Measurements of Pollution in the Troposphere (MOPITT) Observations, International Symposium on the 15th Anniversary of the Equatorial Atmosphere Radar (EAR), August 4, 2016, Jakarta (poster).
- Elfira Saufina, Marzuki and Mutya Vonnisa, Spasial and Temporal Distribution of Lightning in West Sumatera, International Symposium on the 15th Anniversary of the Equatorial Atmosphere Radar (EAR), August 4, 2016, Jakarta (poster).

references

- Assoc. Prof. Hiroyuki Hashiguchi, Laboratory of Radar Atmospheric Science, Research Institute for Sustainable Humanosphere (RISH), Kyoto University, email: hasiguti@rish.kyoto-u.ac.jp
- Dr. Merhala Thurai, Colorado State University Electrical and Computer Engineering, email: merhala.thurai-rajasingam@colostate.edu
- Dr. Michael Schönhuber, Digital Space and Communication Technology, Joanneum Research, Graz, Austria, email: Michael.Schoenhuber@joanneum.at