

Curriculum Vitae



Associate Professor Koh Tieh Yong

Associate Professor

Centre for University Core

Tel : +65 6248 0315

URL : <http://alum.mit.edu/www/tiehyong>

Education Qualifications

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| 2001 | PhD (Atmospheric Science), Massachusetts Institute of Technology |
| 1994 | BSc Hons 1 st (Physics), Imperial College London |

Academic and Professional Experience

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| 2015 - 2016 | Associate Professor, School of Environment, Nanyang Technological University (NTU) |
| 2013 - 2015 | Associate Professor, School of Physical & Mathematical Sciences, NTU |
| 2009 - 2016 | Principal Investigator, Earth Observatory of Singapore, NTU |
| 2008 - 2017 | Co-Investigator, Center for Environmental Sensing & Modeling (CENSAM), Singapore-MIT Alliance for Research and Technology (SMART) |
| 2005 - 2014 | Principal Investigator, Temasek Laboratories, NTU |
| 2004 - 2013 | Assistant Professor, School of Physical & Mathematical Sciences, NTU |
| 2001 - 2004 | Research Scientist (A), Temasek Laboratories, National University of Singapore (NUS) |
| 2001 | Visiting Scientist, Laboratoire de Meteorologie Dynamique (LMD), Ecole Polytechnique |

Membership and Professional Activities

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| 2020 - 2021 | Member, Syllabus Development Committee for Pre-University H1 and H2 Geography, Ministry of Education, Singapore |
| 2020 | Contributor, "ASEAN State of Climate Change Report", commissioned by ASEAN Working Group on Climate Change (AWGCC) |
| 2019 | Member, Curriculum Review Committee for Pre-University Geography, Ministry of Education, Singapore |
| 2017 - Present | Member, Stratospheric and Tropospheric Influences on Tropical Convective Systems, Stratosphere-Troposphere Processes and their Role in Climate, World Climate Research Programme, World Meteorological Organisation |

2016 - Present	Editor, Scientific Online Letters on the Atmosphere, Meteorological Society of Japan
2016 - Present	Member, Asia-Australia Monsoon Working Group, CLIVAR/GEWEX Monsoons Panel, World Meteorological Organisation
2015	Invited Speaker, International Student Energy Summit
2014 - Present	Member, Madden-Julian Oscillation Task Force, Working Group on Numerical Experimentation, World Meteorological Organisation
2014	Examiner, Asian Physics Olympiad
2013 - 2014	Member, Advisory Committee, Climate Change Exhibition, Singapore Science Centre
2013	Expert Reviewer, 5th Assessment Report, Inter-governmental Panel for Climate Change
2012	Editor, Advances in Geosciences, Vol. 28 - Atmospheric Science and Ocean Science
2011	Editor, Advances in Geosciences, Vol. 22 - Atmospheric Science
2010 - Present	Secretary, Atmospheric Sciences Section, Asia-Oceania Geosciences Society
2006	Examiner, International Physics Olympiad
2004 - Present	Member, Asia-Oceania Geosciences Society

Consultation and Executive Experience

2021	Singapore Ministry of Education, Academy of Singapore Teachers, Teacher Trainer for “Climate for Secondary and Pre-University Geography” programme
2014 - 2015	DSO National Laboratories, Weather Project Consultant
2012	DSO National Laboratories, Weather Project Consultant

Research Interests

- Weather and climate of Southeast Asia
- Multi-scale interactions in the tropical atmosphere
- Predictability and complexity in atmospheric science
- Mixing and transport of tracers
- Geophysical fluid dynamics

Selected Publications

Journal Articles (Refereed):

- Teo, C.-K., T.-Y. Koh, K. K. W. Cheung, B. Legras, H. N. Huynh, L. Y. Chew and L. Norford (2021), “Scaling characteristics of modelled tropical oceanic rain clusters”, *Q. J. R. Meteorol. Soc.*, 147(735), 1055-1069. doi: 10.1002/qj.3959.
- Fonseca, R., T.-Y. Koh and C.-K. Teo (2019), “Multi-scale interactions in a high-resolution tropical-belt experiment and observations”, *Clim. Dyn.*, 52(5), 3503-3532. doi: 10.1007/s00382-018-4332-y.
- Li, X. X., T.-Y. Koh, J. Panda and L. K. Norford (2016), “Impact of urbanization patterns on the local climate of a tropical city Singapore: an ensemble study”, *J. Geophys. Res.*, 121(9), 4386-4403. doi: 10.1002/2015JD024452.

- Koh, T.-Y. and R. Fonseca (2016), "Subgrid-scale cloud-radiation feedback for the Betts-Miller-Janjic convection scheme", Q. J. R. Meteorol. Soc., 142(695), 989-1006. doi:10.1002/qj.2702.
- Chen, H., P. Malanotte-Rizzoli, T.-Y. Koh, G. Song (2014), "The relative importance of the wind-driven and tidal circulations in Malacca Strait", Cont. Shelf Res., 88, 92-102.
- Koseki, S., T.-Y. Koh and C.-K. Teo (2014), "Borneo vortex and meso-scale convective rainfall", Atmos. Chem. and Phys., 14, 4539-4562, doi:10.5194/acp-14-4539-2014.
- Li, X. X., T.-Y. Koh, D. Entekhabi, M. Roth, J. Panda and L. K. Norford (2013), "A multi-resolution ensemble study of a tropical urban environment and its interactions with the background regional atmosphere", J. Geophys. Res. doi: 10.1002/jgrd.50795.
- Koseki, S., T. Y. Koh and C. K. Teo (2013), "Effects of the Cold Tongue in the South China Sea on the Monsoon, Diurnal Cycle and Rainfall in the Maritime Continent", Quarterly Journal of the Royal Meteorological Society, 139(675), 1566-1582. DOI: 10.1002/qj.2052.
- Koh, T. Y., S. Wang and B. C. Bhatt (2012), "A diagnostic suite to assess NWP performance", J. Geophys. Res., 117, D13109, doi:10.1029/2011JD017103.
- Li, X. X., R. E. Britter, L. K. Norford, T. Y. Koh and D. Entekhabi (2012), "Flow and pollutant transport in urban street canyons of different aspect ratios with ground heating: large-eddy simulation", Boundary-Layer Meteorology, 142(2), 289-304.
- Teo, C. K., T. Y. Koh, C. F. Lo, B. C. Bhatt (2011), "Principal Component Analysis of observed and modelled diurnal rainfall in the Maritime Continent", J. Clim., 24(17), 4662-4675.
- Koh, T. Y. and C. K. Teo (2009), "Towards a mesoscale observation network in Southeast Asia", Bull. Amer. Meteor. Soc., 90(4), doi: 10.1175/2008BAMS2561.1.
- Joseph, B., B. C. Bhatt, T. Y. Koh and S. Chen (2008), "Sea breeze simulation over Malay Peninsula over an intermonsoon period", J. Geophys. Res., 113, D20122, doi:10.1029/2008JD010319.
- Koh, T. Y. and R. A. Plumb (2004), "Isentropic zonal average formalism and the near-surface circulation", Quart. J. Roy. Meteor. Soc., 130(600), pp. 1631-1654.
- Koh, T. Y. and B. Legras (2002), "Hyperbolic lines and the stratospheric polar vortex", Chaos, 12(2), pp. 382-394. [****most cited paper****]
- Koh, T. Y. and R. A. Plumb (2000), "Lobe dynamics applied to barotropic Rossby-wave breaking", Phys. Fluids, 12(6), pp. 1518-1528.

Book Chapters:

- Annamalai, H., W. R. Boos, G. Martin, B. Mapes, Y. Ming, P. Mukhopadhyay, T.-Y. Koh and S. Rao (2021), "Grand Challenges in Asian Summer Monsoon Modeling — Representation of Processes and Sources of Model Error" in The Multiscale Global Monsoon System, C.-P. Chang, K.-J. Ha, R. H. Johnson, D. Kim, G. N. C. Lau and B. Wang, Eds., Vol. 11, World Scientific Series on Asia-Pacific Weather and Climate, World Scientific Publishing Co, pp. 420. ISBN: 978-981-121-659-6 (hardcover), 978-981-121-661-9(e-book).

- Robertson, A. W., V. Moron, C.-P. Chang, F. Tangang, E. Aldrian, T. Y. Koh, L. Juneng (2011), "The Maritime Continent Monsoon" in The Global Monsoon System - Research and Forecast, C.-P. Chang, Y. Ding, N.-C. Lau, R. H. Johnson, B. Wang and T. Yasunari, Eds., Vol. 5, World Scientific Series on Asia-Pacific Weather and Climate, World Scientific Publishing Co, pp. 594. ISBN: 978-981-4343-40-4.
- Koh, T. Y. and P. Linden (2011), "Geophysical and Environmental Fluid Mechanics" in Environmental Hazards, the Fluid Dynamics and Geophysics of Extreme Events, H. K. Moffatt and E. Shuckburgh, Eds., Vol. 21, Lecture Notes Series, Institute for Mathematical Sciences, National University of Singapore, World Scientific Publishing Co, pp. 315. ISBN: 978-981-4366-99-1.

Proceeding Papers:

- T.-Y. Koh (2015), "Statistical Distributions and Climate Change", Procedia IUTAM, 17, 53-58, doi:10.1016/j.piutam.2015.06.009.
- Panda, J. and T.-Y. Koh (2014), "Interaction between urban surface boundary and mesoscale weather", Proceedings of the 11th Symposium on the Urban Environment, American Meteorological Society, 2-6 February 2014. (<https://ams.confex.com/ams/94Annual/webprogram/Paper232705.html>)

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