

## Curriculum Vitae



### Associate Professor Koh Tieh Yong

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### Education Qualifications

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| 2001 | PhD (Atmospheric Science), Massachusetts Institute of Technology |
| 1994 | BSc Hons 1 <sup>st</sup> (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 - Present | Co-Investigator, Center for Environmental Sensing & Modeling (CENSAM),<br>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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| 2015           | Invited Speaker, International Student Energy Summit  |
| 2014           | Examiner, Asian Physics Olympiad  |
| 2011 - 2012    | Expert Reviewer, 5 <sup>th</sup> Assessment Report, Inter-governmental Panel for Climate Change |
| 2010 - 2011    | Volume Editor, Advances in Geosciences, Vol. 16 - Atmospheric Sciences                          |
| 2010 - Present | Secretary, Atmospheric Sciences Section, Asia-Oceania Geosciences Society                       |
| 2006           | Examiner, International Physics Olympiad  |
| 2004 - Present | Member, Asia-Oceania Geosciences Society  |
| 1997 - Present | Member, American Meteorological Society   |

## Consultation and Executive Experience

2014 - 2015	DSO National Laboratories, Atmospheric Dispersion 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):

- R. M. Fonseca, T. Zhang and K. T. Yong (2015), "Improved simulation of precipitation in the tropics using a modified BMJ scheme in the WRF model", *Geosci. Model Dev.*, 8, 2915-2928, doi:10.5194/gmd-8-2915-2015.
- T.-Y. Koh and F. Wan (2015), "Theory of the norm induced metric in atmospheric dynamics", *Atmos. Chem. and Phys.*, 15, 2571-2594, doi:10.5194/acp-15-2571-2015.
- 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.
- Lee, S. Y. and T. Y. Koh (2014), "Isentropic Primitive Equations for the Troposphere", *Quart. J. Roy. Meteor. Soc.*, 140, 2484–2490. doi: 10.1002/qj.2312.
- 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", *Quart. J. Roy. Meteor. Soc.*, 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.
- 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:**

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.

Koh, T. Y. and R. A. Plumb (2003), "Isentropic zonal average formalism and the near-surface circulation", *Proceedings of the 14th Conference on Atmospheric and Oceanic Fluid Dynamics*, American Meteorological Society, 9-13 June 2003.

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