

CURRICULUM VITAE

YOUNG-HA KIM

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EMPLOYMENT **Postdoctoral Researcher**

- Institute for Atmospheric and Environmental Sciences,
Goethe University Frankfurt, Germany (May 2018 – present) /
Research group: *Theory of Atmospheric Dynamics and Climate*
- Severe Storm Research Center, Ewha Womans University, South Korea
(Mar. 2016 – Apr. 2018) / *Atmospheric Dynamics Research Group*
- Department of Atmospheric Sciences, Yonsei University, South Korea
(Sep. 2014 – Feb. 2016) / *Lab. for Atmospheric Dynamics*

EDUCATION **Ph. D. in Atmospheric Sciences** (Mar. 2008 – Aug. 2014)

- Department of Atmospheric Sciences, Yonsei University, South Korea
- Advisor: Prof. Hye-Yeong Chun
- Dissertation title: *Equatorial planetary and gravity waves in the stratosphere and their contribution to the QBO*

M. Sc. in Atmospheric Sciences (Mar. 2006 – Feb. 2008)

- Department of Atmospheric Sciences, Yonsei University, South Korea
- Advisor: Prof. Hye-Yeong Chun
- Thesis title: *Characteristics of mesospheric gravity waves in Korean Peninsula and the effects of the secondary waves*

B. Sc. in Atmospheric Sciences (Mar. 2002 – Feb. 2006)

- Department of Atmospheric Sciences, Yonsei University, South Korea

HONORS / AWARDS

- WMO Professor Mariolopoulos Trust Fund Award (2018) [*Kim and Chun*, 2015, JGR]
- European Geosciences Union (EGU) Outstanding Student Poster (OSP) Awards (2014)
- Korean Meteorological Society Thesis Award (2014)
- Graduate School of Yonsei University Thesis Award (2014)

RESEARCH ACTIVITY **Contributor/Author**

- 2014–present: *SPARC QBOi — Towards Improving the Quasi-Biennial Oscillation in Global Climate Models*
(coordinators: S. Osprey, N. Butchart, K. Hamilton, and J. Anstey)

- 2014–present: *SPARC Reanalysis Intercomparison Project (S-RIP)*
(coordinators: M. Fujiwara, G. Manney, and L. Gray)
 - *Chapter 8: Tropical Tropopause Layer*
 - *Chapter 9: Quasi-Biennial Oscillation and Tropical Variability*

**RESEARCH
PROJECT
EXPERIENCE**

Principal Investigator

- 2015–2017: *Investigation of the Quasi-Biennial Oscillation effect on the midlatitude climate over Asia* [NRF]

Research Assistant

- 2012–2014: *Effects of Convective Gravity Wave Parameterization in a Climate Change Prediction Model* [KMA]
- 2014: *Development and Implementation of Parameterization of Gravity Waves from Jet/Front System* [Korea Institute of Atmospheric Prediction Systems]
- 2013: *Development of Method to Diagnose Gravity Wave Generations for Parameterization of Gravity Waves from Jet/Front System* [Korea Institute of Atmospheric Prediction Systems]
- 2010: *Improvement of Next-Generation Numerical Weather Prediction Model (II)* [KMA]
- 2009: *Development of Next-Generation Numerical Weather Prediction Model (I)* [KMA]
- 2006–2009: *Development of Next-Generation Gravity-Wave Parameterization* [National Research Laboratory Program / NRF]

NRF: National Research Foundation of Korea

KMA: Korea Meteorological Administration

**OTHER
EXPERIENCES**

Visitings / Collaborations

- Stratosphere and Large-Scale Dynamics group, Met Office, Exeter, UK (Drs. David R. Jackson and Andrew C. Bushell): Feb. – Apr. 2012
 - *Kim et al.* (2013, GRL)
- Institute for Energy and Climate – Stratosphere, Juelich Research Center, Juelich, Germany (Drs. Peter Preusse and Manfred Ern): May – Nov. 2011
 - *Kim et al.* (2012, ACP); *Lehmann et al.* (2012, AMT)

**COMPUTATION
TOOL**

Operating System: Linux/Unix, Microsoft Windows, MacOS

Programming: Fortran 77/90, Linux Shell [Bash, Csh],
NCAR Command Language (NCL), IDL

PUBLICATION International Peer-Reviewed Journal Articles

- Butchart, N., J. A. Anstey, K. Hamilton, S. Osprey, C. McLandress, A. C. Bushell, Y. Kawatani, Y.-H. Kim, F. Lott, J. Scinocca, T. N. Stockdale, M. Andrews, O. Bellprat, P. Braesicke, C. Cagnazzo, C.-C. Chen, H.-Y. Chun, M. Dobrynin, R. R. Garcia, J. Garcia-Serrano, L. J. Gray, L. Holt, T. Kerzenmacher, H. Naoe, H. Pohlmann, J. H. Richter, A. A. Scaife, V. Schenzinger, F. Serva, S. Versick, S. Watanabe, K. Yoshida, and S. Yukimoto, 2018: Overview of experiment design and comparison of models participating in phase 1 of the SPARC Quasi-Biennial Oscillation initiative (QBOi). *Geosci. Model Dev.*, 11(3), 1009-1032, doi:10.5194/gmd-11-1009-2018.
- Kang, M.-J., H.-Y. Chun, and Y.-H. Kim, 2017: Momentum flux of convective gravity waves derived from an offline gravity wave parameterization. Part I: Spatiotemporal variations at source level. *J. Atmos. Sci.*, 74(10), 3167-3189, doi:10.1175/JAS-D-17-0053.1.
- Song, I.-S., C. Lee, J.-H. Kim, G. Jee, Y.-H. Kim, H.-J. Choi, H.-Y. Chun, and Y. H. Kim, 2017: Meteor radar observations of vertically propagating low-frequency inertia-gravity waves near the southern polar mesopause region. *J. Geophys. Res.*, 122(4), 4777-4800, doi:10.1002/2016JA022978.
- Kim, Y.-H., H.-Y. Chun, S.-H. Park, I.-S. Song, and H.-J. Choi, 2016: Characteristics of gravity waves generated in the jet-front system in a baroclinic instability simulation. *Atmos. Chem. Phys.*, 16(8), 4799-4815, doi:10.5194/acp-16-4799-2016.
- Kim, Y.-H., and H.-Y. Chun, 2015: Momentum forcing of the quasi-biennial oscillation by equatorial waves in recent reanalyses. *Atmos. Chem. Phys.*, 15(12), 6577-6587, doi:10.5194/acp-15-6577-2015.
- Kim, Y.-H., and H.-Y. Chun, 2015: Contributions of equatorial wave modes and parameterized gravity waves to the tropical QBO in HadGEM2. *J. Geophys. Res.*, 120(3), 1065-1090, doi:10.1002/2014JD022174.
- Kim, Y.-H., A. C. Bushell, D. R. Jackson, and H.-Y. Chun, 2013: Impacts of introducing a convective gravity-wave parameterization upon the QBO in the Met Office Unified Model. *Geophys. Res. Lett.*, 40(9), 1873-1877, doi:10.1002/grl.50353.
- Kim, Y.-H., H.-Y. Chun, P. Preusse, M. Ern, and S.-Y. Kim, 2012: Gravity wave reflection and its influence on the consistency of temperature- and wind-based momentum fluxes simulated above Typhoon Ewiniar. *Atmos. Chem. Phys.*, 12(22), 10787-10795.
- Lehmann, C., Y.-H. Kim, P. Preusse, H.-Y. Chun, M. Ern, and S.-Y. Kim, 2012: Consistency between Fourier transform and small-volume few-wave decomposition for spectral and spatial variability of gravity waves above a typhoon. *Atmos. Meas. Tech.*, 5(7), 1637-1651.

- Chun, H.-Y., Y.-H. Kim, H.-J. Choi, and J.-Y. Kim, 2011: Influence of gravity waves in the tropical upwelling: WACCM simulations. *J. Atmos. Sci.*, 68, 2599-2612.
- Kim, Y.-H., and H.-Y. Chun, 2009: Effects of the basic-state wind on secondary waves generated by the breaking of gravity waves in the mesosphere. *Asia-Pacific J. Atmos. Sci.*, 45(1), 91-100.
- Chun, H.-Y., and Y.-H. Kim, 2008: Secondary waves generated by breaking of convective gravity waves in the mesosphere and their influence in the wave momentum flux. *J. Geophys. Res.*, 113, D23107, doi:10.1029/2008JD009792.
- Chun, H.-Y., J.-S. Goh, and Y.-H. Kim, 2007: Characteristics of inertio-gravity waves revealed in rawinsonde data observed in Korea during 20 August to 5 September 2002. *J. Geophys. Res.*, 112, D16108, doi:10.1029/2006JD008348.