**Yeonuk Kim**

Ph.D. Student in RES, UBC

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**EDUCATION**

2017 - current **Ph.D. Student.** Resources, Environment and Sustainability, University of British Columbia (UBC)

2016 **B.S.** Rural Systems Engineering,Seoul National University (SNU)

*-Cum laude-*

**PROFESSIONAL & TEACHING APPOINTMENTS**

2017 - current Graduate Research Assistant, UBC Ecohydro Lab, UBC (PI: Dr. Mark Johnson)

2018 - current Graduate Teaching Assistant, ENVR 420: *Ecohydrology of Watershed and Water Systems*, UBC

2017 - 18 Graduate Teaching Assistant, LFS 250: *Land, Food and Community 1*, UBC

2016 Researcher, National Center for AgroMeteorology, Korea

2014 - 15 Undergraduate Research Assistant, Complex Systems Science Lab, SNU (PI: Dr. Joon Kim)

**RESEARCH INTERESTS**

Ecohydrology, Biosphere-Atmosphere Interactions, Land Use Change, Land and Water Management

* Interactions of soil, hydrological cycle, carbon cycle, GHG fluxes, energy flux, and biota
* Impacts of human & climate change on ecohydrological systems and their feedbacks
* Evapotranspiration, moisture recycling, and cascading effect of drought over Amazonia

**AWARDS, FELLOWSHIPS, & SCHOLARSHIPS**

Graduate program

2019 Mitacs Globallink Research Award, *Mitacs*

2018 - current Four Years Doctoral Fellowships, *UBC*

2017 - current International Tuition Award, *UBC*

2017 - 18 Faculty of Science Graduate Award, *UBC*

2018 Excellence Prize, Idea contest for sustainable water management in South Korea, *Award by President of Korea Water Resources Corporation*

Undergraduate program

2017 Grand Prize, Essay contest for a place with potential value to become a representative attraction of Cheongju city in Korea, *Award by Minister of Culture, Sports and Tourism*

2017 Excellent Degree Thesis Award, *College of Agriculture and Life Science, SNU*

2015 Grand Prize**,** SNU Undergraduate Research Award, *President of SNU*

2015 Evergreen Scholarship, *SNU Evergreen Scholarship Foundation*

2014 - 15 Agricultural Engineering Scholarship, *SNU Alumni Association of Agricultural Engineering*

2011, 14-15 Merit Based Scholarship (Scholarship of Superior Academic Performance), *SNU*

2009 National Scholarship for Science and Engineering, *Korea Student Aid Foundation*

**PROFESSIONAL MEMBERSHIPS**

Student member, European Geoscience Union (since 2019)

Student member, American Geophysical Union (since 2017)

Associate member, Korean Meteorological Society (since 2015)

**RESEARCH PARTICIPATIONS**

2017 - current Agricultural Water Innovation in the Tropics (AgWIT), [Water JPI 2016 Joint Call for Transnational Collaborative Research Projects](http://www.waterjpi.eu/index.php?option=com_content&view=article&id=440&Itemid=1008), Natural Sciences and Engineering Research Council of Canada

2016 Constructing the foundation of core technologies for custom-made agricultural & forest meteorological services, Korea Meteorological Administration

2015 **Principal Investigator,** Understanding the methane emission mechanism in an intermittently irrigated rice paddy and suggesting mitigation strategy. Funding: 3,000,000 (Korean won), SNU undergraduate research program

2015 Constructing the terrestrial ecosystem carbon database for the Carbon- Tracker-Asia improvement, Korea Meteorological Administration

2014 - 15 Development of time series database for CO2 fluxes and investigation of ecosystem carbon dynamics, Korea Meteorological Administration

**PUBLICATIONS**

1. **Peer- reviewed journal articles:**

International Journals

[2] **Kim, Y.**, Johnson, M. S., Knox, S., Black, T. A., Dalmagro, H. J., Kang, M., Kim, J., Baldocchi, D. Gap-filling approaches for eddy covariance methane flux: a comparison of three machine learning algorithms and a traditional method with and without principal component analysis. *submitted to Global Change Biology*

[1] **Kim, Y.**, Talucder, M. S. A., Kang, M., Shim, K. -M., Kang, N. & Kim, J. (2016). Interannual variations in methane emission from an irrigated rice paddy caused by rainfall during the aeration period. *Agriculture, Ecosystems & Environment.* 223, 67-75.

※ SCI. 2016 IF=4.099, Rank=1/56 (Agriculture, Multidisciplinary). **Time Cited: 10**

Korean Journals

[1] Choi, S.W., Kim, H., **Kim, Y.**, Kang, M. & Kim, J. (2016). Estimation and mapping of methane emission from rice paddies in Gyunggi-do using the modified water management scaling factor. *Korean Journal of Agricultural and Forest Meteorology.* 18(4), 320-326

1. **Selected presentations & posters:**

[5] **Kim, Y.**, Johnson, M. S., Knox, S., Black, T. A., Dalmagro, H. J., Kang, M., Kim, J., Ryu, Y., Baldocchi, D. (2019). CH4 flux gap-filling approaches for eddy covariance data: a comparison of three machine learning algorithms and marginal distribution sampling method with and without principal component analysis. *2019 EGU General Assembly.* Vienna, Austria (Poster)

[4] **Kim, Y.** & Johnson, M. S. (2017). Spectral entropy as a mean to quantify water stress history for natural vegetation and irrigated agriculture in a water-stressed tropical environment. *2017 AGU Fall Meeting.* New Orleans, Louisiana, USA (Poster)

[3] Johnson, M. S., Lathuilliere, M. J., Morillas, L., Dalmagro, H. J., D’Acunha, B., **Kim, Y.**, Suarez, A. & Couto, E. G. (2017). Carbon and water fluxes and footprints in tropical agricultural systems under rainfed and irrigated conditions. *2017 AGU Fall Meeting.* New Orleans, Louisiana, USA (invited)

[2] Choi, S.W., Kang, M., Indrawati, Y.M., Kim, H., **Kim, Y.** & Kim, J. (2016). Carbon footprint estimation using long-term flux measurement in Haenam, Korea: Implication for climate-smart agriculture. *EcoSummit 2016*. Le Corum, Montpellier, France (Poster)

[1] **Kim, Y.**, Talucder, M. S. A., Kang, M., Kang, N., Shim, K. -M. & Kim, J. (2015). Changes in methane emission from rice paddy triggered by rainfall during the mid-season Drainage (in Korean). *The 2015 Korean Meteorological Society Fall Conf*. Jeju, Korea (Oral)

1. **Books (Non-refereed):**

[1] Group1: Lee, J. et al., Group2: Kim, J. et al., Group3: **Kim, Y.** et al. (2015). World seeing through Rural Systems Engineering (in Korean). *SNU Rural Systems Engineering*. 5

1. **Copyright registration (in Korea):**

[2] Copyright: NCAM (developer: Kim, J. & **Kim, Y.**), 2016, Computing power spectral density and spectral entropy within specific bands. # C-2016-026366.

[1] Copyright: NCAM (developer: Kim, J. & **Kim, Y.**), 2015, Computing “Scaling factor for water regime (SFW)” to estimate CH4 emission from rice paddy (in Korean), # C-2015-028272.

**RELEVANT SKILLS**

1. **Experimental facilities**

* Eddy covariance system (H2O, CO2, CH4 & Heat fluxes)

LI-7700/ LI-7500(A)/ LI-7200 gas analyzers, LI-610 dew point generator (LI-COR),

CSAT3 ultrasonic anemometer, AP200 profile system, Dataloggers (Campbell Sci.),

Data managing & processing: EddyPro (LI-COR), LoggerNet (Campbell Sci.)

* Meteorological and ecological sensors

CNR4 net radiometer, CS616 tensiometer, TCAV soil thermometers, Rain gauge,

HMP temperature and relative humidity probe, LWS-L leaf wetness sensor, LAI-2200C etc.

1. **Computer skills**

Proficient in: R/R studio, MATLAB, Google Earth Engine, MS Office, EndNote, Window

Experience in: Community Land Model (CLM), Linux, Javascript, Python, QGIS, ArcGIS

**3. Languages:** English & Korean

**WORKSHOPS, CERTIFICATIONS & OTHER ACTIVITIES**

Feb. 2019 CLM (Community Land Model) / CTSM (Community Terrestrial Systems Model) tutorial, National Center for Atmospheric Research (NCAR) Mesa Lab, Boulder, CO, USA

Aug. 2016 International summer school, National Cheng Kung University, Taiwan,   
*Sustainable Development and Management for Lowland Environmental Resilience*

Aug. 2013 International summer school, BTU Cottbus, Germany & Incheon NationalUniversity, Korea,*Integrated Urban Environmental Planning: Challenges & Approaches*

2012 Craftsman Environmental, National Qualifications, Korea

2011 - 13 Civil Engineer (Military service), Republic of Korea Air Force

Jan. 2010 Volunteer for teaching sciences, Korea Foundation for the Advancement of Science and Creativity

2009-10, 13-14 Teaching math, Private tutor