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학력

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주요경력

- 2017년 4월 – 현재 **UNSW Water Research Centre** 박사후 연구원
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병역사항

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수상 및 장학금 수혜

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논문

[Impact Factor/ #Citations ]

❖ 학술지

- [1] **Kim S.**, Dong J., Sharma A. (2021) A triple collocation-based comparison of three L-band soil moisture datasets, SMAP, SMOS-IC, and SMOS, over varied climates and land covers, *Front. Water.*, 3, 64, [–/0]
- [2] Kim S., Mehrotra R., **Kim S.**[교신], Sharma A. (2021) Assessing countermeasure effectiveness in controlling cyanobacterial exceedance in riverine systems using probabilistic forecasting alternatives, *J. Water Resour. Plan. Manag.*, 147(10), 04021062, [3.404/0]
- [3] **Kim, S.**, Sharma, A., Liu, Y. Y., & Young, S. I. (2021). Rethinking Satellite Data Merging: From Averaging to SNR Optimization, *TechRxiv* (submitted to *IEEE TGRS*), [–/0]
- [4] Kim S., Mehrotra R., **Kim S.**, Sharma A. (2021) Probabilistic forecasting of Cyanobacterial concentration in riverine systems using environmental drivers, *J. Hydrol.*, 593, 125626, [4.500/1]
- [5] Zhang R., **Kim S.**[교신], Sharma A., Lakshmi V. (2021). Identifying relative strengths of SMAP, SMOS-IC, and ASCAT to capture temporal variability using a model combination approach, *Remote Sens. Environ.*, 252, 112126, [9.085/2]

- [6] Kim S., Anabalón A., Sharma A. (2021) An Assessment of Concurrency in Evapotranspiration Trends Across Multiple Global Datasets, *J. Hydrometeorol.*, 22(1), 231–244, [3.891/0]
- [7] Kim S., Pham H., Liu Y., Marshall L., Sharma A. (2020). Improving the combination of satellite soil moisture datasets by considering error cross-correlation: A comparison between triple collocation (TC) and extended double instrumental variable (EIVD) alternatives, *IEEE Trans. Geosci. Remote Sens.*, Early Access, 1–11, [5.855/1]
- [8] Magan B., Kim S., Wasko C., Barbero R., Moron V., Nathan R., Sharma A. (2020). Impact of atmospheric circulation on the rainfall–temperature relationship in Australia, *Environ. Res. Lett.*, 15(9), 094098, [6.096/2]
- [9] Kim S., Kim S.[교신], Mehrotra R., Sharma A. (2020). Predicting cyanobacteria occurrence using climatological and environmental controls, *Water Res.*, 175, 115639, [9.130/5]
- [10] Kim T., Ley T., Kang S., Davis J., Kim S., Amrollahi P. (2020). Using Particle Composition of Fly Ash to Predict Strength and Resistivity of Concrete, *Cem. Concr. Compos.*, 107, 103493, [6.257/8]
- [11] Kim S., Ajami H., Sharma A. (2020). Using remotely sensed information to improve vegetation parameterization in a semi-distributed hydrological model (SMART) for upland catchments in Australia, *Remote Sens.*, 12(18), 3501, [4.509/0]
- [12] Moradi S., Agostino A., Gandomkar Z., Kim S., Hamilton L., Sharma A., Henderson R., and Leslie G. (2020). Quantifying natural organic matter concentration in water from climatological parameters using different machine learning algorithms, *H2Open Journal*, 3(1), 328–343, [NA/3]
- [13] Kim S., Eghdamirad S., Sharma A., Kim J. H. (2020). Quantification of uncertainty in projections of extreme daily precipitation, *Earth and Space Sci.*, 2020, e2019EA001052–T, [2.312/4]
- [14] Hagan D., Wang G., Kim S., Parinussa R., Liu Y., Ullah W., Bhatti S., Ma X., Jiang T., Su B. (2020). Maximizing Temporal Correlations in Long-Term Global Satellite Soil Moisture Data Merging, *Remote Sens.*, 12 (13), 2164, [4.509/4]
- [15] Kim S., Zhang R., Pham H., Sharma A. (2019). A review of satellite-derived soil moisture and its usage for flood estimation, *Remote Sens. Earth Syst. Sci.*, 2, 225–246, [NA/9]
- [16] Pham H., Kim S., Johnson F., Marshall L. (2019). Using 3D robust smoothing to fill land surface temperature gaps at the continental scale, *Int. J. Appl. Earth Obs. Geoinf.*, 82, 10879, [4.650/9]
- [17] Kim S., Jun H. D., Yoo D. G., Kim J. H. (2019). A framework for improving reliability of water distribution systems based on a segment-based minimum cut-set approach, *Water*, 11(7), 1524, [2.544/3]
- [18] Zhang R., Kim S.[교신], Sharma A. (2019). A comprehensive validation of the SMAP Enhanced Level-3 Soil Moisture product using ground measurements over varied climates and landscapes, *Remote Sens. Environ.*, 223, 82–94, [9.085/38]
- [19] Kim S., Sharma A. (2019). The role of floodplain topography in deriving basin discharge using passive microwave remote sensing, *Water Resour. Res.*, 55(2), 1707–1716, [4.309/9]
- [20] Khan U., Ajami H., Tuteja N., Sharma A., Kim S. (2018). Catchment Scale Simulations of Soil Moisture Dynamics Using an Equivalent Cross-Section based Hydrological Modelling Approach, *J. Hydrol.*, 564, 944–966, [4.500/11]
- [21] Kim S., Paik K., Johnson F., Sharma A. (2018). Building a flood warning framework for ungauged locations using low resolution, open access remotely sensed surface soil moisture, precipitation, soil and topographic information, *IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens.*, 11(2), 375–387, [3.827/16]
- [22] Kim S., Balakrishnan K., Liu Y., Johnson F., Sharma A. (2017). Spatial Disaggregation of Coarse Soil Moisture Data by Using High Resolution Remotely Sensed Vegetation Products, *IEEE Geosci. Remote. Sens. Lett.*, 14(9), 1604–1608, [3.833/13]
- [23] Kim S., Parinussa R., Liu Y., Johnson F., Sharma A. (2016). Merging Alternate Remotely-Sensed Soil Moisture Retrievals Using a Non-Static Model Combination Approach, *Remote Sens.*, 8 (6), 518, [4.509/10]
- [24] Silva A., Subasinghe K., Rajapaksha C., Raveenthiran K., Kim S., Young M., Perera H. N. R., Araki S. (2016). Assessment of Design Alternation via 2D Physical Modelling in the Main Breakwater of Colombo Port Expansion Project. *J. Jpn. Soc. Civ. Eng., Ser. B2 (Coastal Engineering)*, 72(2), 1129–1134, [–/0]

- [25] **Kim S.**, Parinussa R., Liu Y., Johnson F., Sharma A. (2015). A framework for combining multiple soil moisture retrievals based on maximizing temporal correlation, *Geophys. Res. Lett.*, 42 (16), 2015GL064981, [4.497/31]
- [26] **Kim S.**, Liu Y., Johnson F., Parinussa R., Sharma A. (2015). A global comparison of alternate AMSR2 soil moisture products: Why do they differ? *Remote Sens. Environ.*, 161 (0), 43–62, [9.085/123]
- [27] Jun H. D., **Kim S.**, Yoo D. G., Kim J. H. (2009). Evaluation of the reliability improvement of a water distribution system by changing pipe, *J. Korea Water Resour. Assoc.*, 42 (6), 505–511, [-/5]

❖ 컨퍼런스

- [1] M. Young, J. Hayman-Joyce, **S. Kim**. (2012). Use of Single Layer Concrete Armour Units as Toe Reinforcement, *Coast. Eng. Proc.*, 1 (33), 48, [-/3]

학술대회 발표 (주발표자)

- [1] **Kim S.**, Zhang R., Sharma A., Lakshmi V. Improvements of satellite observations through data merging: status and challenges, *AGU fall meeting 2020*, San Francisco, CA, USA
- [2] **Kim S.**, Pham H., Liu Y., Sharma A., Marshall L. Combining geophysical variables for maximizing temporal correlation without reference data, *MODSIM 2019*, Canberra, Australia
- [3] **Kim S.**[초청], Guo Y., Wasko C., Sharma A. On soil moisture, rain and flood extremes in a warming climate – using satellite remote sensing to define future antecedent conditions, *KSCC 2018*, Jeju, Republic of Korea
- [4] **Kim S.**, Ajami H., Sharma A. Incorporating an operational satellite-derived leaf area index into a computationally efficient semi-distributed hydrologic modelling application (SMART), *MODSIM 2017*, Hobart, Australia
- [5] **Kim S.**, Liu Y., Johnson F., Sharma A. A temporal correlation-based approach for spatial disaggregation of remotely sensed soil moisture, *AGU fall meeting 2016*, San Francisco, CA, USA
- [6] **Kim S.**, Liu Y., Johnson F., Parinussa R., Sharma A. Reducing Structural Uncertainty in AMSR2 Soil Moisture Using a Model Combination Approach, *AGU fall meeting 2014*, San Francisco, CA, USA
- [7] **Kim S.**, Liu Y., Johnson F., Parinussa R., Sharma A. Improvement of Soil Moisture Dataset Combining AMSR2 Soil Moisture Products, *OzEWEX 2014*, Canberra, ACT, Australia

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수리/수문학, 인공위성 원격탐사, MATLAB, Python, ArcGIS/QGIS

연구경력

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교육경력

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학술활동

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참고인

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