CURRICULUM VITAE (July 30, 2021)

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NATIONALITY: Japanese

EDUCATION:

- Ph.D. in Science, Tohoku University, March 1999
- M.S. in Agriculture, Tottori University, March 1996
- B.S. in Agriculture, Hirosaki University, March 1994

PROFESSIONAL EXPERIENCE:

- Associate Professor, March 2005 to present
  Arid Land Research Center, Tottori University
  Subdivision of Meteorology, Division of Climatology and Water Resources
- Junior Associate Professor, April 2001 to February 2005
  Arid Land Research Center, Tottori University
  Subdivision of Natural Environment, Division of Climatology and Water Resources
- Assistant Professor, August 1999 to March 2001
  Faculty of Science, University of the Ryukyus
  Department of Physics and Earth Sciences
- Research Scientist, April 1999 to July 1999
  Research Institute for Bioresources, Okayama University
  Division of Response to Environment

HONORS & AWARDS

1. Prize for encouragement by The Society of Agricultural Meteorology of Japan (July 1999)

2. Prize for Scientific Research Achievement by Tottori University (March 2003)

RESEARCH SUPPORT (representative)

1. Application research towards future Earth observations (GCOM-C application) by Japan Aerospace Exploration Agency. Development of global desertification map. 2020 to 2022.
2. Grant-in-Aid for Scientific Research (no. 19H04239) by Ministry of Education, Science, Sports and Culture. Development of observation system and monitoring method for land degradation in arid regions. 2019 to 2023.
3. Application research towards future Earth observations (GCOM-C application) by Japan Aerospace Exploration Agency. Development of global desertification map. 2017 to 2019.
4. Grant-in-Aid for Scientific Research (no. 25304037) by Ministry of Education, Science, Sports and Culture. Development of the monitoring system for Asian dust occurrence in East Asia. 2013 to 2017.
5. Grant-in-Aid for Scientific Research (no. 20405038) by Ministry of Education, Science, Sports and Culture. Land surface process in the yellow sand source area-To make for the politics to control the yellow sand-. 2008 to 2012.
6. Grant-in-Aid for Scientific Research (no. 13760184) by Ministry of Education, Science, Sports and Culture. Empirical study on the heat flux in sub-tropical cultivated land. 2001 to 2002.

PUBLICATIONS (SCI only)

1. Kimura, R. and Kondo, J. : Heat balance model over a vegetated area and its application to a paddy field. Journal of the Meteorological Society of Japan, 76(6),937-953 (1998).
2. Kimura, R. and Kondo, J. : Studies on the relationships among the leaf transfer coefficient for water vapor, soil water content, and spectral reflectance. Journal of the Meteorological Society of Japan, 77(4),873-886 (1999).
3. Kimura, R., Otsuki, K. and Kamichika, M. : Relationships between the zero-plane displacement and the roughness length over sorghum and alfalfa canopies. Journal of Agricultural Meteorology, 55(1), 15-24 (1999).
4. Kato, T., Kimura, R. and Kamichika, M.: Estimation of evapotranspiration, transpiration ratio and water-use efficiency from a sparse canopy using a compartment model. Agricultural Water Management, 65, 173-191(2004).
5. Kimura, R., Kamichika, M., Takayama, N., Matsuoka, N. and Zhang, X : Heat

balance and soil moisture in the Loess Plateau, China. Journal of Agricultural Meteorology, 60(2), 103-113 (2004).

6. Kimura, R., Okada, S., Miura, H. and Kamichika, M.: Relationships among the leaf area index, moisture availability, and spectral reflectance in an upland rice field. Agricultural Water Management, 69, 83-100 (2004).
7. Takayama, N., Kimura, R., Kamichika, M., Matsuoka, N. and Zhang, X.: Climatic features of rainfall in the Loess Plateau in China. Journal of Agricultural Meteorology, 60(3), 173-189 (2004).
8. Okatsu, K., Kimura, R. and Kamichika, M.: Estimation of evaporation from a bare soil surface using a zero flux plane method. Journal of Agricultural Meteorology, 60(5), 1089-1092 (2005).
9. Kimura, R., Liu, Y., Takayama, N., Kamichika, M., Matsuoka, N. and Zhang, X.: Heat balance and soil water content for bare soil surfaces in the Loess Plateau, China. Journal of Agricultural Meteorology, 60(5), 1013-1016 (2005).
10. Kimura, R., Liu, Y., Takayama, N., Zhang, X., Kamichika, M. and Matsuoka, N.: Heat and water balances of the bare soil surface and the potential distribution of vegetation in the Loess Plateau, China. Journal of Arid Environments, 63, 439-457 (2005).
11. Kimura, R., Fan, J., Zhang, X., Takayama, N., Kamichika, M. and Matsuoka, N.: Evapotranspiration over the grassland field in the Liudaogou basin of the Loess Plateau, China. Acta Oecologica, 29, 45-53 (2006).
12. Liu, Y., Hiyama, T., Kimura, R. and Yamaguchi, Y.: Temporal influences on Landsat-5 Thematic Mapper image in visible band. International Journal of Remote Sensing, 27, 3183-3201 (2006).
13. Kimura, R., Bai, L., Fan, J., Takayama, N. and Hinokidani, O.: Evapo-transpiration estimation over the river basin of the Loess Plateau of China based on remote sensing. Journal of Arid Environments, 68, 53-65 (2007).
14. Munkhtsetseg, E., Kimura, R., Wang, J. and Shinoda, M.: Pasture yield response to precipitation and high temperature in Mongolia. Journal of Arid Environments, 70, 94-110 (2007).
15. Kimura, R.: Estimation of moisture availability over the Liudaogou river basin of the Loess Plateau using new indices with surface temperature. Journal of Arid Environments, 70, 237-252 (2007).
16. Liu, Y., Yano, T., Nishiyama, S. and Kimura, R.: Radiometric correction for linear change-detection techniques: analysis in bi-temporal space. International Journal of Remote Sensing, 28, 5143-5157 (2007).

17. Perveen, Mst. F., Nagasawa, R., Ahmed, A.O.C., Uddin, Md. I. and Kimura, R.: Integrating biophysical and socio-economic data using GIS for land evaluation of wheat cultivation: A case study in north-west Bangladesh. Journal of Food, Agriculture & Environment, 6, 432-437 (2008).
18. Takagi, K., Kimura, R. and Saylan, L.: Variability of surface characteristics and energy flux patterns of sunn hemp (Crotalaria juncea L.) under well watered conditions. Theoretical and Applied Climatology, 96, 261-273 (2009).
19. Kimura, R., Bai, L. and Wang, J.: Relationships among dust outbreaks, vegetation cover, and surface soil water content on the Loess Plateau of China, 1999-2000. CATENA, 77, 292-296 (2009).
20. Kimura, R. and Shinoda, M.: Spatial distribution of threshold wind speeds for dust outbreaks in northeast Asia. Geomorphology, 114, 319-325 (2010).
21. Shinoda, M., Kimura, R., Mikami, M., Tsubo, M., Nishihara, E., Ishizuka, M., Yamada, Y., Munkhtsetseg, E., Jugder, D. and Kurosaki, Y.: Characteristics of dust emission in the Mongolian steppe during the 2008 DUVEX intensive observation period. SOLA, 6, 009-012 (2010).
22. Nandintsetseg, B., Shinoda, M., Kimura, R. and Ibaraki, Y.: Relationship between soil moisture and vegetation activity in the Mongolian steppe. SOLA, 6, 029-032 (2010).
23. Mohamed, A.A., Kimura, R., Shinoda, M. and Moriyama, M.: Diurnal surface temperature difference index derived from ground-based meteorological measurements for assessment of moisture availability. Journal of Arid Environments, 75, 156-163 (2011).
24. Saylan, L., Kimura, R., Munkhtsetseg, E. and Kamichika, M.: Seasonal variation of carbon dioxide fluxes over irrigated soybean (Glycine max. L.). Theoretical and Applied Climatology, 105, 277-286 (2011).
25. Kimura, R. and Shinoda, M.: Estimation of surface soil water content from surface temperatures in dust source regions of Mongolia and China. Environmental Earth Sciences, 65, 1847-1853 (2011).
26. Matsushima, D., Kimura, R. and Shinoda, M.: Soil moisture estimation using thermal inertia: Potential and sensitivity to data conditions. Journal of Hydrometeorology, 13, 638-648 (2012).
27. Kimura, R.: Factors contributing to dust storms in source regions producing the yellow-sand phenomena observed in Japan from 1993 to 2002. Journal of Arid Environments, 80, 40-44 (2012).
28. Jugder, D., Sugimoto, N., Shinoda, M., Kimura, R., Matsui, I. and Nishikawa, M.:

Dust, biomass burning smoke, and anthropogenic aerosol detected by polarization-sensitive Mie lidar measurements in Mongolia. Atmospheric Environment, 54, 231-241 (2012).

29. Kimura, R.: Effect of the strong wind and land cover in dust source regions on the Asian dust event over Japan from 2000 to 2011. SOLA, 8, 077-080 (2012).
30. Ishizuka, M., Mikami, M., Yamada, Y., Kimura, R., Kurosaki, Y., Jugder, D., Gantsetseg, B., Cheng, Y. and Shinoda, M.: Does ground surface soil aggregation affect transition of the wind speed threshold for saltation and dust emission? SOLA, 8, 129-132 (2012).
31. Yasuda, H., Berndtsson, R., Hinokidani, O., Huang, J., Saito, T., Zheng, J. and Kimura, R.: The impact of plant water uptake and recharge on groundwater level at a site in the Loess Plateau of China. Hydrology Research, 44, 106-116 (2013).
32. Tasumi, M. and Kimura, R.: Estimation of volumetric soil water content over the Liudaogou river basin of the Loess Plateau using the SWEST method with spatial and temporal variability. Agricultural Water Management, 118, 22-28 (2013).
33. Abdelbasit, M.A.M., Ohja, C.S.P., Huang, J., Yasuda, H., Kimura, R. and Ahmed, Z.: Relationship between rainfall erosivity indicators under arid environments: Case of Liudaogou basin in Chinese Loess Plateau. Journal of Food, Agriculture & Environment, 11(2), 1073-1077 (2013).
34. Jugder, D., Shinoda, M., Kimura, R., Batbolod, A. and Amarjargal, D.: Quantitative analysis on windblown dust concentrations of PM10 (PM2.5) during dust events in Mongolia. Aeolian Research, 14, 3-13 (2014).
35. Kimura, R. and Moriyama, M.: Application of a satellite-based aridity index in dust source regions of northeast Asia. Journal of Arid Environments, 109, 31-38 (2014).
36. Abulaiti, A., Kimura, R., Shinoda, M., Kurosaki, Y., Mikami, M., Ishizuka, M., Yamada, Y., Nishihara, E. and Gantsetseg, B.: An observational study of saltation and dust emission in a hotspot of Mongolia. Aeolian Research, 15, 169-176 (2014).
37. Kimura, R., Moriyama, M. and Bandou, S.: Relationship between land surface temperature and rice quality in Tottori prefecture, Japan. International Journal of Remote Sensing, 36, 5690-5706 (2015).
38. Tasumi, M., Kimura, R., Allen, R.G., Moriyama, M. and Trezza, R.: Development of the GCOM-C global ETindex estimation algorithm. Journal of Agricultural Meteorology, **72**, 85-94. (2016).
39. Kimura, R.: Satellite-based mapping of dust erodibility in northeast Asia. Natural Hazards, doi:10.1007/s11069-016-2393-y (2016).
40. Kimura, R., Abulaiti, A., Mano, M. and Matsushima, D.: Surface heat flux analysis

in Gobi Desert steppe, Mongolia – An observation study. SOLA, 12, 175-180 (2016).

41. Munkhtsetseg, E., Shinoda, M., Gillies, J.A., Kimura, R., King, J. and Nikolich, G.: Relationships between soil moisture and dust emissions in a bare sandy soil of Mongolia. Particuology, 28, 131-137 (2016).
42. Abulaiti, A., Kimura, R. and Kodama, Y.: Effect of flexible and rigid roughness elements on aeolian sand transport. Arid Land Research and Management, 31, 111-124, DOI: 10.1080/15324982.2016.1260665 (2016).
43. Kimura, R.: Validation and application of the monitoring method for degraded land area based on a dust erodibility in eastern Asia. International Journal of Remote Sensing, 38, 4553-4564 (2017).
44. Munkhtsetseg, E., Shinoda, M., Ishizuka, M., Mikami, M., Kimura, R. and Nicolich, G.: A livestock trampling function for potential emission rate of wind-blown dust in a Mongolian temperate grassland. Atmospheric Chemistry and Physics, 17, 11389-11401 (2017).
45. Saylan, L., Kimura, R., Caldag, B. and Akatas, N.: Modeling of soil water content for vegetated surface by artificial neural network and adaptive neuro-fuzzy inference system. *Italian Journal of Agrometeorology*, 3, 37-44 (Mar. 2018).
46. Kimura, R.: Global distribution of degraded land area based on dust erodibility determined from satellite data. *International Journal of Remote Sensing*, 39, 5859-5871 (Sep. 2018).
47. Liu, J. and Kimura, R.: Wind speed characteristics and blown sand flux over a gravel surface in a compact wind tunnel. *Aeolian Research*, 35, 39-46 (Oct. 2018).
48. Kimura, R. and Moriyama, M.: Determination by MODIS satellite-based methods of recent global trends in land surface aridity and degradation. *J. Agric. Meteorol*, 75(3), 153-159 (Jul. 2019).
49. Kimura, R. and Moriyama, M.: Recent trends of annual aridity indices and classification of arid regions with satellite-based aridity indices. *Remote Sensing in Earth System Sciences*. 2, 88-95 (Sep. 2019).
50. Alhamshry, A., Fenta, A.A., Yasuda, H., Kimura, R. and Shimizu, K.: Seasonal peak rainfall variability in Ethiopia and its long-term link to global sea surface temperatures. *Water*, 12(1), 55; https://doi.org/10.3390/w12010055 (Dec. 2019).
51. Takayama, N., Kimura, R., Liu, J. and Moriyama, M.: Long-term spatial distribution of vegetation and sand movement following the commencement of landscape conservation activities to curb grassland encroachment at the Tottori Sand Dunes natural monument. *International Journal of Remote Sensing*, 41, 3070-3094 (Dec. 2019).

52. Şaylan, L., Kimura, R., Altinbaş, N., Çaldağ, B. and Bakanoğullari, F.: Modeling of surface conductance over Sunn Hemp by artificial neural network. Italian Journal of Agrometeorology 24(3), 37-48. doi:10.13128/ijam-589 (Dec. 2019).
53. Kimura, R., Iwasaki, E. and Matsuoka, N.: Analysis of the Recent Agricultural Situation of Dakhla Oasis, Egypt, Using Meteorological and Satellite Data. Remote Sensing, 12, 1264; doi:10.3390/rs12081264 (Apr. 2020).
54. Matsushima, D., Kimura, R., Kurosaki, Y., Ganzorig, U. and Shinoda, M.: A method for estimating the threshold wind speed for dust emissions as a function of soil moisture. Boundary Layer Meteorology, 175, 237-257 (May 2020).
55. Kimura, R.: Global Detection of Aridification or Increasing Wetness in Arid Regions from 2001 to 2013. Natural Hazards, 103, 2261-2276 (Sep. 2020).
56. Liu, J., Kimura, R. and Wu, J.: Vertical profiles of wind-blown sand flux over fine gravel surfaces and their implications for field observation in arid regions. Atmosphere, 11, 1029; doi:10.3390/atmos11101029 (Sep. 2020).
57. Kimura, R. and Moriyama, M.: Use of a satellite-based aridity index to monitor decreased soil water content and grass growth in grasslands of north-east Asia. Remote Sensing, 12, 3556; doi:10.3390/rs12213556 (Oct. 2020).
58. Liu, J., Kimura, R., Miyawaki, M. and Kinugasa, T.: Effects of plants with different shapes and coverage on the blown-sand flux and roughness length examined by wind tunnel experiments. Catena, 197, 104976 (Feb. 2021).
59. Kinugasa, T., Sagayama, T., Gantsetseg, B., Liu, J. and Kimura, R.: Effect of simulated grazing on sediment trapping by single plants: A wind-tunnel experiment with two grassland species in Mongolia. Catena, 202, 105262 (July 2021).
60. Kimura, R. and Moriyama, M.: Use of a MODIS Satellite-Based Aridity Index to Monitor Drought Conditions in Mongolia from 2001 to 2013. Remote Sensing, 13, 2561; https://doi.org/10.3390/rs13132561 (June 2021).