

Kazuki Nanko | Curriculum Vitae

Affiliation

Senior Researcher

Laboratory of Meteorological Forest Damage and Buffer Forest
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- ORCID <http://orcid.org/0000-0002-1157-9287>
- Researcher ID <http://www.researcherid.com/rid/F-4833-2010>
- Google Scholar Citations http://scholar.google.com/citations?user=_xIV3-wAAAAJ
- ResearchGate http://www.researchgate.net/profile/Kazuki_Nanko

Born: 16 January 1980 | Tokorozawa, Saitama, Japan

Grew up: Matsudo, Chiba, Japan

Languages: Japanese (mother tongue); English (communication for research)

Education

2004–07. PhD in Agriculture, Forest Science,
Graduate School of Agricultural and Life Sciences, the University of Tokyo.
Dissertation: "Studies on the process of throughfall drop generation in forest canopies"

2002–04. MA in Agriculture, Forest Science,
Graduate School of Agricultural and Life Sciences, the University of Tokyo.
Thesis: "Evaluating and modeling of the influence of canopy species and meteorological factors on throughfall drop size distribution" [in Japanese]

1998–02. BS in Agriculture, Forest Science,
Faculty of Agriculture, the University of Tokyo.
Thesis: "Assessment of raindrop impact energy under Japanese cypress plantation using laser drop-sizing gauge" [in Japanese]

Employment

2016–pres. Senior Researcher.
Department of Disaster Prevention, Meteorology and Hydrology
Forestry and Forest Products Research Institute (FFPRI), Japan

2014–16. Senior Researcher.
Department of Meteorological Environment

Forestry and Forest Products Research Institute (FFPRI), Japan

2013–14. Research Associate.
Department of Meteorological Environment
Forestry and Forest Products Research Institute (FFPRI), Japan

2011–13. Postdoctoral Research Fellow.
Department of Forest Site Environment
Forestry and Forest Products Research Institute (FFPRI), Japan

2011. JSPS Postdoctoral Research Fellow.
Department of Agriculture
Tokyo University of Agricultural and Technology, Japan

2010–11. Postdoctoral Research Fellow.
Department of Forest Site Environment
Forestry and Forest Products Research Institute (FFPRI), Japan

2009–10. Postdoctoral Research Fellow.
Graduate School of Life and Environmental Sciences
University of Tsukuba, Japan

2008–09. Postdoctoral Research Associate.
Department of Geological Sciences
University of South Carolina, USA

2007–08. Postdoctoral Research Fellow.
Graduate School of Life and Environmental Sciences
University of Tsukuba, Japan

2005–07. JPSP Research Fellow.
Graduate School of Agricultural and Life Sciences
the University of Tokyo, Japan

Awards

2016. **Encouragement Award of the Japanese Forest Society**, "Physical interpretation of the difference in drop size distributions of leaf drips among tree species"
2004. **Best Poster Presentation Award**: *in the 2004 IUFRO Forest Hydrology Workshop, Kota Kinabalu, Malaysia*, "The Influence of Forest Species and Atmospheric Phenomena on the Throughfall Raindrop Size Distribution"
2002. **Award of the President of the Japan Science and Technology Association (JAFTA)**, *in the 13th Student Research Papers on Forestry Technology Competition*. "Assessment of raindrop impact energy under Japanese cypress plantation using laser drop-sizing gauge"

Research Interests

I am interested in the cross-cutting science at interface of meteorology (wind, rainfall, snow, etc.), forestry, and soil science from ecohydrological and geomorphological perspectives. Specific interest is raindrops, rainfall redistribution process by forest canopy, tree sway and breakage mechanism by fluid (wind, avalanche, and tsunami), and soil erosion in mountainous forest area.

Fields:

- Ecohydrology

- Hydrogeomorphology
- Tree Biomechanics (and Ecomechanics)

Keywords:

- raindrop; drop size distribution (DSD); rainfall erosivity,
- canopy interception; throughfall,
- tree sway; tree breakage; wind damage; computational fluid dynamics,
- splash erosion; soil erosion,
- soil carbon; National Forest Soil Carbon Inventory,
- Japanese cypress,
- laser disdrometer, LDG (laser drop-sizing gauge)

Research Grant

PI

2016. Japan Society for the Promotion of Science, Invitation Fellowship for Research in Japan (Short-term), No. S16088.
 "Study on rainfall redistribution by forest canopy using natural and simulated rainfall"
 Role: Host. (Fellow: Delphis Francis Levia Jr., University of Delaware)
- 2015–17. Japan Society for the Promotion of Science, Grant-in-Aid for Young Scientists (A), No. 15H05626.
 "3D physical simulation on tree wetting and drying processes through multipoint raindrop measurements"
 Budget: ¥15,900,000
- 2014–15. Forestry and Forest Products Research Institute, Research Grant, No. 201412.
 "Simulation of buffering function and breakage dynamics of a tree against wind/tsunami by the particle method"
 Budget: ¥4,000,000
2011. Japan Society for the Promotion of Science, Grant-in-Aid for JSPS Fellows, No. 11J07538.
 "Estimation of rainfall re-distribution by forest canopy on hillslope"
 Budget: ¥800,000
2007. Japan Society of Erosion Control Engineering, Grant-in-Aid for Young Scientists.
 "Understanding spatial distribution of soil erosion in forest watershed with bared soil surface"
 Budget: ¥200,000
- 2005–06. Japan Society for the Promotion of Science, Grant-in-Aid for JSPS Fellows, No. 05J11212.
 "Clarification of throughfall drop generation process and assessment of surface erosion in forest"
 Budget: ¥1,900,000

Co-PI

- 2017–19. Japan Society for the Promotion of Science, Grant-in-Aid for Scientific Research (C), No. 17K07836.
 "Clarifying the dynamic interaction among trees to improve prediction accuracy of forest damage by typhoon"
 PI: Kana Kamimura, Shinshu University
 Budget: ¥300,000 (in 2017)

2016–19. Forestry and Forest Products Research Institute, Research Grant, No. 201502
“Integrated analysis of forest ecosystem services for regional forest management”
PI: Yuichi Yamaura, Forestry and Forest Products Research Institute
Budget: ¥628,000 (in 2016–17)

2016–17. Japan Society for the Promotion of Science, Grant-in-Aid for Challenging Exploratory Research, No. 16K14937.
“Why are multilayer forests resistant to wind damage? – Integration among history of leaf distribution structure, tree vibration engineering, and wind engineering”
PI: Hiromi Mizunaga, Shizuoka University
Budget: ¥550,000

Cooperation

2015–17. Japan Society for the Promotion of Science, Grant-in-Aid for Scientific Research, No. 15H04520.

“Studies on canopy interception mechanism using water stable isotope”
PI: Shigeki Murakami, Forestry and Forest Products Research Institute

2011–13. Japan Society for the Promotion of Science, Grant-in-Aid for Scientific Research, No. 23540507.

“Rainfall generation in winter in mountainous area in Chubu region and its effect to snow structure”
PI: Kenichi Ueno, University of Tsukuba

2007–08. US Fish and Wildlife Service.

“Hydrological Impacts of *Miconia calvescens* in Hawai’i”
PI: Thomas W. Giambelluca, University of Hawai’i at Mānoa

2003–04. Japan Forest Technology Association, Encouragement Program of Academic Study.
“Clarification of the properties of throughfall drop size distribution and its generation mechanism”

PI: Norifumi Hotta, the University of Tokyo

Publications

Book

Nanko, K. 2008. Mechanism and actual condition of splash erosion on forest floor. *in: Onda, Y. (Eds.), Actual condition between plantation degradation and discharge of water and soil*, Iwanami Shoten, Tokyo, pp. 125-134. [in Japanese]

Nanko, K. 2008. Change of raindrops in Japanese cypress forest. *in: Onda, Y. (Eds.), Actual condition between plantation degradation and discharge of water and soil*, Iwanami Shoten, Tokyo, pp. 15-23. [in Japanese]

Nanko, K. 2008. New understanding: land use and water interactions. *in: Calder I.R. (Author) Kuraji, K., Hayashi, Y. (Supervising translation), Blue revolution*, Tsukiji Shokan, Tokyo, pp. 8-33. [in Japanese]

Refereed Journal Publication

2017

34. Imamura, N., Levia, D.F., Toriyama, J., Kobayashi, M. and **Nanko, K.** 2017. Stemflow-induced spatial heterogeneity of radiocesium concentrations and stocks in the soil of a

broadleaved deciduous forest. *Science of the Total Environment* 599–600: 1013–1021. DOI:10.1016/j.scitotenv.2017.05.017

33. **Nanko, K.**, Hashimoto, S., Miura, S., Ishizuka, S., Sakai, Y., Levia, D.F., Ugawa, S., Nishizono, T., Kitahara, F., Osone, Y. and Kaneko, S. 2017. Assessment of soil group, site and climatic effects on soil organic carbon stocks of topsoil in Japanese forests. *European Journal of Soil Science* 68: 547–558. DOI: 10.1111/ejss.12444
32. Levia, D.F., Hudson, S.A., Llorens, P. and **Nanko, K.** 2017. Throughfall drop size distributions: a review and prospectus for future research. *Wiley Interdisciplinary Reviews: Water* 4: e1225. doi:10.1002/wat2.1225
31. Hashimoto, S., **Nanko, K.**, Ľupek, B. and Lehtonen, A. 2017. Data-mining analysis of the global distribution of soil carbon in observational databases and Earth system models. *Geoscientific Model Development* 10: 1321–1337. doi:10.5194/gmd-10-1321-2017

2016

30. Tanaka, N., Levia, D.F., Igarashi, Y., Yoshifuji, N., Tanaka K., Tantasirin, C., **Nanko, K.**, Suzuki, M. and Kumagai, T. 2016. What factors are most influential in governing stemflow production from plantation-grown teak trees? *Journal of Hydrology* 544: 10–20. doi:10.1016/j.jhydrol.2016.11.010
29. Shinohara, Y., Otani, S., Kubota, T., Otsuki, K. and **Nanko, K.** 2016. Effects of plant roots on the soil erosion rate under simulated rainfall with high kinetic energy. *Hydrological Sciences Journal* 61: 2435–2442. doi:10.1080/02626667.2015.1112904
28. Weber, Y., Jolivet, V., Gilet, G., **Nanko, K.** and Ghazanfarpour, D. 2016. A phenomenological model for throughfall rendering in real-time. *Computer Graphics Forum* 35: 13–23. doi:10.1111/cgf.12945
27. **Nanko, K.**, Hudson, S.A. and Levia, D.F. 2016. Differences in throughfall drop size distributions in the presence and absence of foliage. *Hydrological Sciences Journal* 61: 620–627. doi:10.1080/02626667.2015.1052454
26. **Nanko, K.**, Onda, Y., Kato, H. and Gomi, T. 2016. Immediate change in throughfall spatial distribution and canopy water balance after heavy thinning in a dense mature Japanese cypress plantation. *Ecohydrology* 9: 300–314. doi:10.1002/eco.1636
25. **Nanko, K.**, Moskalski S.M. and Torres, R. 2016. Rainfall erosivity–intensity relationships for normal rainfall events and a tropical cyclone on the US southeast coast. *Journal of Hydrology* 534: 440–450. doi:10.1016/j.jhydrol.2016.01.022

2015

24. Tanaka, N., Levia, D.F., Igarashi, Y., **Nanko, K.**, Yoshifuji, N., Tanaka K., Tantasirin, C., Suzuki, M. and Kumagai, T. 2015. Throughfall under a teak plantation in Thailand: a multifactorial analysis on the effects of canopy phenology and meteorological conditions. *International Journal of Biometeorology* 59: 1145–1156. doi:10.1007/s00484-014-0926-1
23. Thai, P.K., Suka, Y., Sakai, M., **Nanko, K.**, Yen, J.-H. and Watanabe, H. 2015. Export of radioactive cesium from agricultural fields under simulated rainfall in Fukushima. *Environmental Science: Processes & Impacts* 17: 1157–1163. doi:10.1039/C5EM00063G
22. **Nanko, K.**, Giambelluca, T.W., Sutherland, R.A., Mudd, R.G., Nullet, M.A. and Ziegler, A.D. 2015. Erosion potential under *Miconia calvescens* stands on the Island of Hawai'i. *Land Degradation & Development* 26: 218–226. doi:10.1002/ldr.2200

2014

21. Noguchi, H., Suzuki, S., **Nanko, K.**, Takeuchi, Y., Kaneko, T., Nitta, K., Watanabe, K. and

Sakamoto, T. 2014. Evaluation of lodging resistance characteristics of broad-leaved tree and *Pinus thunbergii* planted in coastal sand dunes using tree-pulling experiments. *Journal of the Japanese Society of Coastal Forest* 13: 59–66. [in Japanese with English summary]

20. **Nanko, K.**, Ugawa, S., Hashimoto, S., Imaya, A., Kobayashi, M., Sakai, H., Ishizuka, S., Miura, S., Tanaka, N., Takahashi, M. and Kaneko, S. 2014. A pedotransfer function for estimating bulk density of forest soil in Japan affected by volcanic ash. *Geoderma* 213: 36–45. doi:10.1016/j.geoderma.2013.07.025

2013

19. Kato, H., Onda, Y., **Nanko, K.**, Gomi, T., Yamanaka, T. and Kawaguchi, S. 2013. Effect of canopy interception on spatial variability and isotopic composition of throughfall in Japanese cypress plantations. *Journal of Hydrology* 504: 1–11. doi:10.1016/j.jhydrol.2013.09.028
18. Hashimoto, S., Matsuura, T., **Nanko, K.**, Linkov, I., Shaw, G. and Kaneko, S. 2013. Predicted spatio-temporal dynamics of radiocesium deposited onto forests following the Fukushima nuclear accident. *Scientific Reports* 3: 2564. doi:10.1038/srep02564
17. **Nanko, K.** 2013. Relationship between throughfall kinetic energy and tree height, crown bottom height, and crown length for Japanese cypress plantation. *Journal of the Japanese Forest Society* 95: 234–239. doi:10.4005/jjfs.95.234 [in Japanese with English summary]
16. **Nanko, K.**, Watanabe, A., Hotta, N. and Suzuki, M. 2013. Physical interpretation of the difference in drop size distributions of leaf drips among tree species. *Agricultural and Forest Meteorology* 169: 74–84. doi:10.1016/j.agrformet.2012.09.018

2012

15. Ugawa, S., Takahashi, M., Morisada, K., Takeuchi, M., Matsuura, Y., Yoshinaga, S., Araki, M., Tanaka, N., Ikeda, S., Miura, S., Ishizuka, S., Kobayashi, M., Inagaki, M., Imaya, A., **Nanko, K.**, Hashimoto, S., Aizawa, S., Hirai, K., Okamoto, T., Mizoguchi, T., Torii, A., Sakai, H., Ohnuki, Y. and Kaneko, S. 2012. Carbon stocks of dead wood, litter, and soil in the forest sector of Japan: general description of the National Forest Soil Carbon Inventory. *Bulleting of FFPRI* 11: 207–221.
14. Sato, K., Ueno, K., **Nanko, K.** and Shimizu, S. 2012. Rainfall tendency in winter Sugadairakogen Highlands, Nagano Prefecture. *Journal of Japan Society of Hydrology and Water Resources* 25: 271–289. doi:10.3178/jjshwr.25.271 [in Japanese with English summary]
13. Hashimoto, S., Ugawa, S., **Nanko, K.** and Shichi, K. 2012. The total amounts of radioactively contaminated materials in forests in Fukushima, Japan. *Scientific Reports* 2: 416. doi:10.1038/srep00416

2011

12. **Nanko, K.**, Onda, Y., Ito, A. and Moriwaki, H. 2011. Spatial variability of throughfall under a single tree: Experimental study of rainfall amount, raindrops, and kinetic energy. *Agricultural and Forest Meteorology* 151: 1173–1182. doi:10.1016/j.agrformet.2011.04.006

2010

11. **Nanko, K.**, Onda, Y., Fukada, K., Nonoda, T., Yamamoto, K., Takenaka, C. and Hiraoka, M. 2010. Estimating the economic effect of heavy thinning on the water resource storage function of dense Japanese cypress plantations. *Journal of Japan Society of Hydrology and Water Resources* 23: 437–443. doi:10.3178/jjshwr.23.437 [in Japanese with English summary]

summary]

10. Wakiyama, Y., Onda, Y., **Nanko, K.**, Mizugaki, S., Kim, Y., Kitahara, H. and Ono, H. 2010. Estimation of temporal variation in splash detachment in two Japanese cypress plantations of contrasting age. *Earth Surface Processes and Landforms* 35: 993–1005. doi:10.1002/esp.1844
9. Hiraoka, M., Onda, Y., Kato, H., Mizugaki, S., Gomi, T. and **Nanko, K.** 2010. Effects of understory vegetation on infiltration capacity in Japanese cypress plantation. *Journal of the Japanese Forest Society* 92: 145–150. doi:10.4005/jjfs.92.145 [in Japanese with English summary]
8. Mizugaki, S., **Nanko, K.** and Onda, Y. 2010. The effect of slope angle on splash detachment in an unmanaged Japanese cypress plantation forest. *Hydrological Processes* 24: 576–587. doi:10.1002/hyp.7552
7. **Nanko, K.**, Onda, Y., Ito, A., Ito, S., Mizugaki, S. and Moriwaki, H. 2010. Variability of surface runoff generation and infiltration rate under a tree canopy: indoor rainfall experiment using Japanese cypress (*Chamaecyparis obtusa*). *Hydrological Processes* 24: 567–575. doi:10.1002/hyp.7551

2008

6. Kato, H., Onda, Y., Ito, S. and **Nanko, K.** 2008. Field measurement of infiltration rate using an oscillating nozzle rainfall simulator in devastated hinoki plantation. *Journal of Japan Society of Hydrology and Water Resources* 21: 439–448. doi:10.3178/jjshwr.21.439 [in Japanese with English summary]
5. Ito, A., Onda, Y., **Nanko, K.**, Fukuyama, T. and Moriwaki, H. 2008. Experimental study on spatial distribution of throughfall under a Japanese cypress tree. *Journal of Japan Society of Hydrology and Water Resources* 21: 273–284. doi:10.3178/jjshwr.21.273 [in Japanese with English summary]
4. **Nanko, K.**, Onda, Y., Ito, A. and Moriwaki, H. 2008. Effect of canopy thickness and canopy saturation on the amount and kinetic energy of throughfall: An experimental approach. *Geophysical Research Letters* 35: L05401. doi:10.1029/2007GL033010
3. **Nanko, K.**, Mizugaki, S. and Onda, Y. 2008. Estimation of soil splash detachment rates on the forest floor of an unmanaged Japanese cypress plantation based on field measurements of throughfall drop sizes and velocities. *Catena* 72: 348–361. doi:10.1016/j.catena.2007.07.002

2006

2. **Nanko, K.**, Hotta, N. and Suzuki, M. 2006. Evaluating the influence of canopy species and meteorological factors on throughfall drop size distribution. *Journal of Hydrology* 329: 422–431. doi:10.1016/j.jhydrol.2006.02.036

2004

1. **Nanko, K.**, Hotta, N. and Suzuki, M. 2004. Assessing raindrop impact energy at the forest floor in a mature Japanese cypress plantation using continuous raindrop-sizing instruments. *Journal of Forest Research* 9: 157–164. doi:10.1007/s10310-003-0067-6

Conference Proceedings and Reports (in English)

4. **Nanko, K.**, Suzuki, S., Noguchi, H., Hagino, H., Ogura, A., Ishida, Y., Matsumoto, H., Takimoto, H. and Sakamoto, T. 2015. Simulation of tree deformation of Japanese black pine caused by temporally varied wind. *The 8th Plant Biomechanics International Conference*, 240.

3. Kaneko, S., Ugawa, S., Miura, S., **Nanko, K.** and Takahashi, M. 2012. Monitoring of organic carbon stocks in Japanese forest soil. *MARCO Symposium 2012, Strengthening Collaboration to meet Agro-Environmental Challenges in Monsoon Asia, Tsukuba, Japan*, 154-158.
2. Giambelluca, T.W., Sutherland, R.A., **Nanko, K.**, Mudd, R. and Ziegler, A.D. 2010. Effects of Miconia on hydrology: A first approximation. In *Loope, L.L., J.-Y. Meyer, B.D. Hardesty and C.W. Smith (eds.), Proceedings of the International Miconia Conference, Keanae, Maui, Hawai'i, May 4-7, 2009, Maui Invasive Species Committee and Pacific Cooperative Studies Unit, University of Hawai'i at Manoa*.
<http://www.hear.org/conferences/miconia2009/proceedings/>
1. **Nanko, K.**, Hotta, N. and Suzuki, M. 2004. The influence of forest species and atmospheric phenomena on the throughfall rainfall size distribution. In *R.C. Sidle, Tani M, Abdul Rahim N and Tewodros Ayele T (eds.) Forests and Water in Warm, Humid Asia, Proc. IUFRO Forest Hydrology Workshop, Kota Kinabalu, Malaysia*, 81–83.

Presentations

Invited Lectures and Presentations

- [May 10, 2016] **Nanko, K.** and Levia D.F. Relationship between foliage wettability and throughfall drop size. *Plant Trait Workshop, Interdisciplinary German-Japanese Symposium, iJaDe2016* (TU Dresden, Germany)
- [May 10, 2016] **Nanko, K.** Simulation of dynamic tree sway based on physical vibration theory. *Plant Trait Workshop, Interdisciplinary German-Japanese Symposium, iJaDe2016* (TU Dresden, Germany)
- [Mar 30, 2016] **Nanko, K.** Rainwater path in tree canopy penetrated by raindrops. *Workshop on Forest Hydrology* (Nihon University, Japan) [in Japanese]
- [Mar 27, 2016] **Nanko, K.** Physical interpretation of the difference in drop size distributions of leaf drips among tree species. *Encouragement Award of the Japanese Forest Society* (Nihon University, Japan) [in Japanese]
- [Jun 08, 2014] **Nanko, K.**, Hashimoto, S., Miura, S., Kaneko, S., Levia, D.F. and Hudson, S.A. Which factors determine, 1) soil organic carbon stock, and 2) throughfall drop size? — Introduction of a recent multifactorial analysis, boosted regression trees (BRT). *Seminar in Hydrospheric Atmospheric Research Center* (Nagoya University, Japan)
- [Sep 20, 2013] **Nanko, K.** Process of throughfall raindrop generation and its impact to forest ecosystem services. (University of Delaware, USA)
- [May 01, 2013] **Nanko, K.** Process of throughfall drop generation in forest canopies. (Tokyo University of Agriculture and Technology, Japan)
- [Jan 28, 2013] **Nanko, K.** Inhomogeneous spatial distributions in forest from the viewpoint of locational conditions: from micro scale of splash erosion to macro scale carbon accumulation. (Kyushu University, Japan) [in Japanese]
- [Jun 07, 2007] **Nanko, K.** Study on throughfall drop generation process in forest canopy. (Forestry and Forest Products Research Institute, Japan) [in Japanese]

Symposium Presentations (as a top author in English)

- [Dec 15, 2017] **Nanko, K.**, Levia, D.F., Iida, S., Sun, X., Shinohara, Y. and Sakai, N. Temporal sequencing of throughfall drop generation as revealed by use of a large-scale rainfall

simulator. *2017 AGU Fall Meeting* (New Orleans, USA), poster

- [Jul 20, 2017] **Nanko, K.**, Suzuki, S., Katsushima, T., Minamino, R., Kamimura, K. and Mizunaga, H. Estimation of tree resistance to wind damage using segmented stem and voxelized canopy from terrestrial laser scanner data. *8th International Conference on Wind and Trees* (National Center for Atmospheric Research, Boulder, Colorado, USA), oral
- [Dec 16, 2016] **Nanko, K.**, Oguro, M., Miura, S. and Masaki, T. Prediction of Soil Erosion Rates in Japan where Heavily Forested Landscape with Unstable Terrain. *2016 AGU Fall Meeting* (San Francisco, USA), poster
- [Dec 15, 2015] **Nanko, K.**, Suzuki, S., Noguchi, H. and Hagino, H. Simulation of Tsunami Resistance of a *Pinus Thunbergii* tree in Coastal Forest in Japan. *2015 AGU Fall Meeting* (San Francisco, USA), poster
- [Dec 03, 2015] **Nanko, K.**, Suzuki, S., Noguchi, H., Hagino, H., Ogura, A., Ishida, Y., Matsumoto, H., Takimoto, H. and Sakamoto, T. Simulation of tree deformation of Japanese black pine caused by temporally varied wind. *The 8th Plant Biomechanics International Conference* (Nagoya, Japan), oral
- [Oct 06, 2014] **Nanko, K.**, Miura, S., Ugawa, S., Hashimoto, S., Osone, Y., Ishizuka, S., Sakai, Y., Tanaka, N., Takahashi, M. and Kaneko, S. Detectable differences in carbon stocks of forest soils in Japan: Boosted regression tree analysis can identify stratifying factors. *IUFRO World Congress 2014* (Salt Lake City, USA), poster
- [Apr 10, 2013] **Nanko, K.**, Onda, Y., Ito, A. and Moriwaki, H. Spatial variability of throughfall and raindrops under a single canopy with different canopy structure. *2013 EGU General Assembly* (Vienna, Austria), oral
- [Apr 10, 2013] **Nanko, K.**, Watanabe, A., Hotta, N. and Suzuki, M. Linkage between canopy water storage and drop size distributions of leaf drips. *2013 EGU General Assembly* (Vienna, Austria), poster
- [Apr 09, 2013] **Nanko, K.**, Ugawa, A., Takahashi, M., Morisada, K., Takeuchi, M., Matuura, Y., Yoshinaga, S., Araki, M., Tanaka, N., Ikeda, S., Miura, S., Ishizuka, S., Kobayashi, M., Inagaki, M., Imaya, A., Hashimoto, A., Kaneko, S. and the Inventory Working Group Team. Carbon stocks of dead wood, litter, and soil in the forest sector in Japan estimated by the National Forest Soil Carbon Inventory. *2013 EGU General Assembly* (Vienna, Austria), poster
- [Jul 22, 2010] **Nanko, K.**, Onda, Y., Ito, A., Suwa, S., Moriwaki, H. and Fukuzono, T. Inference of water behavior in a tree canopy based on the dense measurements of throughfall rate and throughfall raindrops. *2010 Western Pacific Geophysics Meeting* (Taipei, Taiwan), oral
- [Dec 14, 2007] **Nanko, K.**, Onda, Y., Ito, A. and Moriwaki, H. Influence of canopy thickness on throughfall amount and kinetic energy under different canopy saturation conditions: an indoor experiment with a Japanese cypress (*Chamaecyparis obtusa*) stand. *2007 AGU Fall Meeting* (San Francisco, USA), poster
- [Jul 28, 2007] **Nanko, K.**, Onda, Y., Ito, A. and Moriwaki, H. Influence of canopy structures on generating throughfall erosivity: an experimental approach. *Sustainable forestry for water resources management and flood mitigation in mountainous regions* (Nagoya, Japan), poster
- [Apr 18, 2007] **Nanko, K.**, Onda, Y., Ito, A. and Moriwaki, H. Influence of canopy structures on generating throughfall erosivity: an experimental approach. *EGU General Assembly 2007* (Vienna, Austria), poster
- [Oct 16, 2006] **Nanko, K.**, Onda, Y., Ito, A., Ito, S. and Moriwaki, H. Effect of canopy

structures for spatial distribution of throughfall depth and raindrops with experimental approach. *3rd APHW Conference* (Bangkok, Thailand), oral

- [Dec 09, 2005] **Nanko, K.**, Mizugaki, S., Onda, Y. and Hiramatsu, S. Evaluation of splash erosion at forest floor in mature Japanese cypress plantations. *2005 AGU Fall Meeting* (San Francisco, USA), poster
- [Mar 15, 2005] **Nanko, K.**, Hotta, N. and Suzuki, M. Surface erosion in mature Japanese cypress plantations and measurement of throughfall raindrops. *US-Japan joint workshop on biochemistry and hydrology in forest watershed associated with LTER (Long-term Ecological Research)*, (Uryu, Japan), poster
- [Jul 11, 2004] **Nanko, K.**, Hotta, N. and Suzuki, M. The influence of forest species and atmospheric phenomena on the throughfall rainfall size distribution. *Forests and Water in Warm, Humid Asia, Proc. IUFRO Forest Hydrology Workshop* (Kota Kinabalu, Malaysia), poster

Symposium Presentations (as a co-author in English)

- [Dec 15, 2017] Levia, D.F., Iida, S., **Nanko, K.**, Sun, X., Shinohara, Y. and Sakai, N. Use of a large-scale rainfall simulator reveals novel insights into stemflow generation. *2017 AGU Fall Meeting*
- [Jun 27, 2017] Yamashita, N., Hashimoto, S., **Nanko, K.**, Ishizuka, S., Osone, Y., Ugawa, S., Tanaka, N., Imaya, A., Kaneko, S. and Miura, S. Fine-resolution mapping of soil carbon stock in Japanese forest based on machine-learning regression kriging. *Pedometrics 2017*
- [Apr 27, 2017] Levia, D.F., Imamura, N., Toriyama, J., Kobayashi, M. and **Nanko, K.** Spatial heterogeneity of radiocesium in the soil of a broadleaved deciduous forest: the marked role of stemflow. *EGU General Assembly 2017*
- [Apr 24, 2017] Hiraoka, M., Onda, Y., Gomi, T., Mizugaki, S., **Nanko, K.** and Kato, H. Controlling factors for infiltration on undisturbed hillslopes in unmanaged plantation forests. *EGU General Assembly 2017*
- [Nov 15, 2016] Levia, D.F., Hudson, S.A., Llorens, P. and **Nanko, K.** Disdrometers: a useful tool to measure throughfall drop size distributions. *Irish National Hydrology Conference 2016*
- [Dec 14, 2015] Tanaka, N., Levia, D.F., Igarashi, Y., Yoshifuji, N., Tanaka, K., Chatchai, T., **Nanko, K.**, Suzuki, M. and Kumagai, T. Factors Governing Stemflow Production from Plantation Grown Teak Trees in Thailand. *2015 AGU Fall Meeting*
- [Dec 14, 2015] Hudson, S.A., Levia, D.F. and **Nanko, K.** Examining the Role of Meteorological Conditions and Throughfall Drop Sizes. *2015 AGU Fall Meeting*
- [Dec 14, 2015] Oda, T., Hiraoka, M., **Nanko, K.**, Sato, T., Hotta, N., Ohte, N., Suzuki, M. and Uchiyama, Y. Spatial pattern of the throughfall volume on a steep slope dominated by deciduous broad-leaved trees. *2015 AGU Fall Meeting*
- [Dec 16, 2014] Hudson, S.A., **Nanko, K.** and Levia, D.F. Throughfall drop size distribution in relation to leaf canopy state. *2014 AGU Fall Meeting*
- [Dec 16, 2014] Tanaka, N., Levia, D.F., Igarashi, Y., **Nanko, K.**, Yoshifuji, N., Tanaka, K., Chatchai, T., Suzuki, M. and Kumagai, T. Throughfall under a teak plantation in Thailand: a multifactorial analysis on the effects of canopy phenology and meteorological conditions. *2014 AGU Fall Meeting*
- [Nov 11, 2014] Saito, A., Kotani, A., Ohta, T., Maximov, T.C., Kononov, A.V. and **Nanko, K.** Differences in characteristic of water and carbon exchanges in overstory and understorey

in eastern Siberian larch forest. *8th annual international symposium on ¹⁴C/H₂O/Energy balance and climate over boreal and arctic regions with special emphasis on eastern Eurasia*"

- [Oct 07, 2014] Miura, S., Kanamori, M., Ogaya, N., **Nanko, K.**, Nagame, I. and Suzuki, M. A new soil erosion survey method in the national forest inventory of Japan. *IUFRO World Congress 2014*
- [Aug 01, 2014] Ueno, K., **Nanko, K.** and Mochizuki, H. Rain on snow (ROS) in Japanese Alps. *AOGS 11th Annual Meeting*
- [Jun 08, 2014] Kaneko, S., Miura, S., Ugawa, S., **Nanko, K.**, Tanaka, N., Osone, Y. and Takahashi, M. Carbon stock of dead wood, litter and mineral soil in the forest of Japan. *20th World Congress of Soil Science*
- [Aug 19, 2013] Sakai, Y., Ishizuka, S., **Nanko, K.**, Ugawa, S. and Kaneko, S. Lignin stock in deadwood debris accumulated in Japanese plantation forests. *INTECOL 2013*
- [Jul 12, 2013] Ueno, K., **Nanko, K.** and Sato, K. Winter rain on snow in Japanese Alps. *Davos Atmosphere and Cryosphere Assembly DACA-13*
- [Apr 09, 2013] Hashimoto S., Matsuura, T., **Nanko, K.**, Linkov, I., Shaw, G. and Kaneko, S. Predicted spatio-temporal dynamics of radiocesium deposited on forests following the Fukushima Dai-ichi nuclear power plant accident. *2013 EGU General Assembly*
- [Sep 26, 2012] Kaneko, S., Ugawa, S., Miura, S., **Nanko, K.** and Takahashi, M. Monitoring of organic carbon stocks in Japanese forest soil. *MARCO Symposium 2012, Strengthening Collaboration to meet Agro-Environmental Challenges in Monsoon Asia*
- [Sep 19, 2012] Hirata, A., Onda, Y., Kato, H., **Nanko, K.**, Kuraji, K., Tanaka, N. and Gomi, T. Effects of Forest Thinning on Canopy Interception in Japanese Cypress Plantations - Changes in the Proportion of Throughfall Components. *3rd International Conference on Forests and Water in a Changing Environment*
- [Jul 03, 2012] Ugawa, S., **Nanko, K.**, Tanaka, N., Ikeda, S., Miura, S., Morisada, K., Takahashi, M. and Kaneko, S. Soil carbon stocks in the forest sector of Japan and their determining factor. *4th International Congress EUROSOIL 2012*
- [Oct 00, 2011] Miura, S., Ugawa, S., **Nanko, K.**, Tanaka, N., Ikeda, S., Morisada, K., Kaneko, S. and Takahashi, M. National Inventory of Soil Carbon Stock In Japanese Forest Confirmed Historical Human Impact On Soil Degradation for Hundred of Years. *ASA-CSSA-SSSA International Annual Meetings*
- [Dec 00, 2010] Kato, H., Onda, Y., **Nanko, K.** and Gomi, T. Field Study of Rainfall Redistribution in Japanese Cypress Plantations. *2010 AGU Fall Meeting*
- [Jul 22, 2010] Onda, Y., Gomi, T., Mizugaki, S., **Nanko, K.** and Fukushima, T. Field and modeling studies on the effects of forest devastation on flooding and environmental issues. *2010 Western Pacific Geophysics Meeting*
- [Apr 15, 2008] Mizugaki, S., Onda, Y., Gomi, T., **Nanko, K.**, Asai, H., Nagamine, M. and Hiramatsu, S. Sediment transport by surface erosion in a mountain catchment draining Japanese cypress forest —understanding connectivity of sediment from hillslope to channel—. *2008 EGU General Assembly*
- [Apr 18, 2008] Wakiyama, Y., Onda, Y., **Nanko, K.**, Mizugaki, S., Kim, Y., Kitahara, H. and Ono, H. Temporal variations of rain splash at the forest floor of Japanese cypress plantations. *2008 EGU General Assembly*
- [Dec 14, 2007] Mizugaki, S., **Nanko, K.** and Onda, Y. The effect of slope angle on splash detachment in steep forest plantation. *2007 AGU Fall Meeting*

- [Jul 28, 2007] Wakiyama, Y., Onda, Y., **Nanko, K.**, Mizugaki, S., Kim, Y., Kitahara, A. and Ono, H. Temporal variation of rain splash at forest floor of young Japanese Cypress plantations. *Sustainable forestry for water resources management and flood mitigation in mountainous regions*
- [Jul 28, 2007] Mizugaki, S., Gomi, T., Onda, Y., Asai, H., **Nanko, K.**, Asano, Y. and Nagamine, M. Runoff and sediment routing in a Japanese cypress plantation watershed estimated from field observation and fingerprinting techniques. *Sustainable forestry for water resources management and flood mitigation in mountainous regions*
- [Apr 20, 2007] Onda, Y., Mizugaki, S., **Nanko, K.**, Asai, H., Nagamine, M., Gomi, T. and Hiramatsu, S. Sediment yield and transportation in a humid forest plantation catchment through various scale field monitoring and FRN analysis. *EGU General Assembly 2007*
- [Apr 18, 2007] Mizugaki, S., Onda, Y., Koga, S., Fukuyama, T., **Nanko, K.**, Asai, H., Nagamine, M. and Hiramatsu, S. Contribution of forest floor to suspended sediment in conifer (Japanese cypress) plantation and broadleaf forest watersheds. *EGU General Assembly 2007*
- [Dec 00, 2006] Onda, Y., Mizugaki, S., **Nanko, K.** and Asai, H. Estimating sediment sources by multiple scale field measurements and fingerprinting using radionuclides. *2006 AGU Fall Meeting*

Journal Reviewing

As an Associated Editor

- Hydrological Research Letters (2011-pres.)

As a Reviewer

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| ● Agricultural and Forest Meteorology | ● Journal of Plant Nutrition and Soil Science |
| ● Atmosphere | ● Land Degradation & Development |
| ● Catena | ● Pedosphere |
| ● Geoderma | ● PLOS ONE |
| ● Hydrological Processes | ● Progress in Physical Geography |
| ● Hydrological Research Letters | ● Quaternary International |
| ● Hydrological Sciences Journal | ● Scientia Agricola |
| ● IEEJ Transactions on Electrical and Electronic Engineering | ● Soil Science and Plant Nutrition |
| ● International Agrophysics | ● Soil Science Society of America Journal |
| ● Japan Agricultural Research Quarterly: JARQ | ○ Japanese Journal of Forest Environment |
| ● Journal of Forest Research | ○ Journal of Japan Society of Hydrology and Water Resources |
| ● Journal of Hydrology | ○ Journal of the Japanese Forest Society |
| ● Journal of Hydrometeorology | ○ Proceedings of Journal of Japan Society of Civil Engineers |

* Enclosed number in parentheses indicates the number of times.

* Filled circle indicates international journal and open circle indicates Japanese domestic journal, respectively.

Academic Society

- American Geophysical Union (AGU)
- European Geosciences Union (EGU)
- International Association of Hydrological Sciences (IAHS)

- The Japanese Forest Society
- Japan Society of Hydrology and Water Resources
- Japanese Society of Coastal Forest

* *Filled circle* indicates international society and *open circle* indicates Japanese domestic society, respectively.

Committee Activities

The Japanese Forest Society

- Assistant of Secretary General (administrating website update), 2014-16
- Editorial board for annual meeting program, 2014-16
- Editorial board for a membership list, 2014
- Judge of the student poster award, 2013

American Geophysical Union (AGU)

- Judge of Outstanding Student Poster Awards, 2017