

Curriculum VITAE

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Dr. Katsutoshi Seki

Current address:

Faculty of Business Administration,
Toyo University

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Education:

Bachelor Degree in the field of Agriculture, 1993, The University of Tokyo, Tokyo, Japan (Advisor: Professor Masashi Nakano)

Master of Science in the field of Agriculture, 1995, The University of Tokyo, Tokyo, Japan (Advisor: Professor Masashi Nakano)

Doctor of Philosophy in the field of Agriculture, 1998, The University of Tokyo, Tokyo, Japan (Advisor: Professor Masashi Nakano)

Professional Experience:

Apr 1998 – Nov 1998 Research Fellow, Department of Biological and Environmental Engineering, Graduate School of Agricultural and Life Sciences, The University of Tokyo

Dec 1998 – Mar 2008 Assistant Professor, Department of Biological and Environmental Engineering, Graduate School of Agricultural and Life Sciences, The University of Tokyo

Aug 2002 – May 2003 Visiting Scholar, Cornell University, USA

Apr 2008 – present Associate Professor, Faculty of Business Administration, Toyo University

Apr 2013 – March 2014 Visiting Scholar, University of Strasbourg, France

Membership in Professional Societies:

Japanese Society of Irrigation, Drainage and Reclamation Engineering

Japanese Society of Soil Physics

Society of Environmental Science, Japan

Professional Activities:

Member of the organizing committee of the Annual Meeting of the Japanese Society of Irrigation, Drainage and Reclamation Engineering, Tokyo, 1999.

Secretarial representative of the University of Tokyo at Japanese Society of Irrigation, Drainage, and Reclamation Engineering. 2001-2002.

Editorial board at Japanese Society of Soil Physics. 1999-2001.
 Editorial Secretary at Japanese Society of Soil Physics. 2001-2003.
 Editorial board of Journal of the Japanese Society of Irrigation, Drainage and Reclamation Engineering. 1999-2001.
 Research committee at Japanese Society of Irrigation, Drainage and Rural Engineering. 2006 – 2009.

Publications:

Papers:

- Seki, K., T. Miyazaki and M. Nakano, Reduction of hydraulic conductivity due to microbial effects, *Journal of Japanese Society of Irrigation, Drainage and Reclamation Engineering* 181, 137-144, 1996.
http://www2.toyo.ac.jp/~seki_k/jsidre1996/
- Seki, K., T. Miyazaki and M. Nakano, Effects of microorganisms on hydraulic conductivity decrease in infiltration, *European Journal of Soil Science* 49, 231-236, 1998. <http://dx.doi.org/10.1046/j.1365-2389.1998.00152.x>
- Fujikawa, T., T. Miyazaki, K. Seki and H. Imoto, Correlation between the distribution of microorganisms and CO₂ and O₂ gas concentrations in a field under rotating use, *Journal of Japanese Society of Irrigation, Drainage and Reclamation Engineering* 208, 443-452. in Japanese with English abstract. 2000.
<http://sciencelinks.jp/j-east/article/200023/000020002300A0847745.php>
- Seki, K. and T. Miyazaki, A mathematical model for biological clogging of uniform porous media, *Water Resources Research* 37, 2995-2999, 2001.
<http://www.agu.org/pubs/crossref/2001/2001WR000395.shtml>
- Seki, K., T. Suko, and T. Miyazaki. Bioclogging of glass beads by bacteria and fungi. *Transactions of World Congress of Soil Science*, 1244-1 - 1244-8, 2002.
http://www2.toyo.ac.jp/~seki_k/wcss2002.pdf
- Seki, K., M. Thullner, and P. Baveye. Nutrient uptake kinetics of filamentous microorganisms: Comparison of cubic, exponential, and monod models. *Annals of Microbiology*, 54(2):181-188, 2004.
http://www.annmicro.unimi.it/full/54/seki_54_181.pdf
- Seki, K., T. Miyazaki, M. Mizoguchi, H. Imoto, K. Nakaya, and H. Miyazawa. A simple estimation of excess rainwater percolation from a buried container into a vadose zone. *Journal of Japanese Society of Soil Physics*, 97:25-30, 2004.
<http://www.js-soilphysics.com/data/pdf/097025.pdf>
- Tokida, T., T. Miyazaki, M. Mizoguchi, and K. Seki. In situ accumulation of methane bubbles in a natural wetland soil. *European Journal of Soil Science*, 56: 389-395, 2005. <http://dx.doi.org/10.1111/j.1365-2389.2004.00674.x>
- Seki, K., J. Kamiya, J., and T. Miyazaki. Temperature dependence of hydraulic conductivity decrease due to biological clogging under ponded infiltration. *Transactions of Japanese Society of Irrigation, Drainage and Reclamation Engineering*, 237:13-19. in Japanese with English abstract. 2005.
http://www2.toyo.ac.jp/~seki_k/jsidre2005.html
- Deb, S. K., T. Miyazaki, M. Mizoguchi, and K. Seki. Return flow generating point in layered slope with traffic pan. *Transactions of Japanese Society of Irrigation, Drainage and Reclamation Engineering*, 241:1-11, 2006.
<http://sciencelinks.jp/j-east/article/200608/000020060806A0170603.php>

- Khalil, M., K. Seki, T. Miyazaki, M. Mizoguchi, and M. Sakai. Analysis of zero flux plane behavior under periodical water supply. *Transactions of Japanese Society of Irrigation, Drainage and Reclamation Engineering*, 246:33-40, 2006. <http://sciencelinks.jp/j-east/article/200704/000020070407A0083102.php>
- Seki, K., M. Thullner, J. Hanada, and T. Miyazaki. Moderate bioclogging leading to preferential flow paths in biobarriers. *Ground Water Monitoring and Remediation*, 26(3):68-76, 2006. <http://www3.interscience.wiley.com/journal/118624502/abstract>
- Yamaguchi, N., K. Seki, M. Komamura, and K. Kurishima. Long-term mobility of fallout ⁹⁰Sr in ploughed soil, and ⁹⁰Sr uptake by wheat grain. *Science of the Total Environment*, 372(2-3): 595-604, 2007. <http://dx.doi.org/10.1016/j.scitotenv.2006.10.011>
- Seki, K. SWRC fit - a nonlinear fitting program with a water retention curve for soils having unimodal and bimodal pore structure. *Hydrology and Earth System Sciences Discussion*, 4: 407-437, 2007. <http://www.hydrol-earth-syst-sci-discuss.net/4/407/2007/>
- Seki, K. A program for nonlinear fitting of soil water retention curve written in numerical calculation language GNU Octave. *Journal of Japanese Society of Soil Physics*, 105:67-78, in Japanese with English abstract. 2007. <http://soil.en.a.u-tokyo.ac.jp/jssp/db/pdf/105067.pdf>
- Dumale Jr., W. A., T. Miyazaki, T. Nishimura, and K. Seki. CO₂ evolution and short-term carbon turnover in stable soil organic carbon from soils applied with fresh organic matter. *Geophysical Research Letters*, 36: L01301, 2008. <http://dx.doi.org/10.1029/2008GL036436>
- Saito, H., K. Seki, and J. Šimůnek. An alternative deterministic method for the spatial interpolation of water retention parameters. *Hydrology and Earth System Sciences*, 13:453-465, 2009. <http://www.hydrol-earth-syst-sci.net/13/453/2009/>
- Wang, L., K. Seki, T. Miyazaki and Y. Ishihama. The causes of soil alkalization in the Songnen Plain of Northeast China. *Paddy and Water Environment*, 7(3): 611-2490, 2009. <http://dx.doi.org/10.1007/s10333-009-0166-x>
- Hamamoto, S., K. Seki and T. Miyazaki. Effect of aggregate structure on VOC gas adsorption onto volcanic ash soil. *Journal of Hazardous Materials*, 166(1): 207-212, 2009. <http://dx.doi.org/10.1016/j.jhazmat.2008.11.008>
- Seki, K., K. Suzuki, T. Nishimura, M. Mizoguchi, H. Imoto and T. Miyazaki. Physical and chemical properties of soils in the fire-affected forest of East Kalimantan, Indonesia. *Journal of Tropical Forest Science*, 22(4): 414-424, 2010. <http://info.frim.gov.my/cfdocs/infocenter/Korporat/2003Publications/Links/JTFS22%284%29/11.%20seki%20k.pdf>
- Seki, K. Analysis of soil salinization and alkalization in the Songnen Plain of northeast China. *Journal of Toyo University, Natural Science*, 55: 17-27, 2011.
- Dumale, W. A. Jr., T. Miyazaki, T. Nishimura, and K. Seki. Short-term dynamics of the active and passive soil organic carbon pools in a volcanic soil treated with fresh organic matter. *E-International Scientific Research Journal*, 3(2): 128-144, 2011. http://www.eisrjc.com/journals/journal_1/eisrj-vol-3-issue-2.pdf
- Seki, K. Remediation of soil contaminated with radionuclides derived from the Fukushima Nuclear Plant accident. *Journal of Business Administration, Toyo University*, 77: 13-26, in Japanese. 2011. <http://www.toyo.ac.jp/fba/keieironshu/pdf78/002.pdf>
- Kajiura, M., T. Tokida and K. Seki. Effects of moisture conditions on potential soil

- water repellency in a tropical forest regenerated after fire. *Geoderma*, 181-182: 30-35, 2012. <http://dx.doi.org/10.1016/j.geoderma.2012.02.028>
- Seki, K. Biological Clogging of Sand Columns. *Open Journal of Soil Science*, 3(3): 148-152, 2013. <http://dx.doi.org/10.4236/ojss.2013.33017>
- Seki, K., P. Ackerer and F. Lehmann. Sequential estimation of hydraulic parameters in layered soil using limited data. *Geoderma*, 247-248: 117-128, 2015. <http://dx.doi.org/10.1016/j.geoderma.2015.02.013>

Books:

- Miyazaki, T. and K. Seki. Effects of microbiological factors on water flow in soils. in *Water flow in soils, Second Edition*, pp. 259-300. CRC Press. 2005.

Presentations on International Society Meetings:

- Seki, K. and T. Miyazaki: Effect of microbial clogging on hydraulic conductivity of paddy field subsoil. ASA/CSSA/SSSA Annual Meetings, Minneapolis, November 7, 2000.
- Seki, K., K. Noda, M. Mizoguchi and T. Miyazaki: A prototype of Japanese soil database on internet. ASA/CSSA/SSSA Annual Meetings, Charlotte, Oct. 21-25, 2001.
- Hanada, J., K. Seki and T. Miyazaki, The anisotropy of hydraulic conductivity and column clogged by microbes, Eos Trans. AGU, 83(19), Spring Meet. Suppl., Abstract H21A-05, 2002.
- Seki, K., J. Hanada and T. Miyazaki: Four models of bioclogging describing anisotropy of hydraulic conductivity in one dimensional flow system. American Geophysical Union Spring Meeting, Washington D.C., May 28, 2002.
- Tokida, T., T. Miyazaki and K. Seki, Gaseous methane dynamics in a waterlogged peat soil. Soil Science Society of America. 2004.
- Seki, K., J. Hanada. and T. Miyazaki, Flow characteristics in permeable reactive barrier affected by biological clogging, Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract H11A-0290.2004.
- Seki, K., T. Miyazaki, H. Imoto and M. Mizoguchi, Soil hydrological properties of Andisols in Japan in relation to the dispersion-coagulation behavior. 18th World Congress of Soil Science, Philadelphia, USA, 2006.
- Seki, K., A program for fitting soil water retention curves with 5 models including a new bimodal lognormal pore-size distribution model. International Session, Japan Geoscience Union Meeting, Makuhari, Japan. 2007.

Award:

- 2006 Research Promoting Award from Japanese Society of Irrigation, Drainage and Reclamation Engineering (Currently Japanese Society of Irrigation, Drainage and Rural Engineering)

Reviewer:

- Environmental Technology
Environmental Progress

Hydrological Processes
Irrigation, Drainage and Rural Engineering Journal
Journal of Contaminant Hydrology
Journal of Hydrologic Engineering
Journal of the Japanese Society of Soil Physics
Journal of Water Supply
Open Journal of Soil Science
Pedosphere
Soil Science and Plant Nutrition
Soil Science Society of America Journal
Water
Water Resources Research
Water, Land and Environmental Engineering

Lecturing/Teaching:

At the University of Tokyo:

Experiments in soil physical environment (1999-2007)
Applied mathematical analysis and exercises (2000-2007)

At Toyo University:

Environmental science (2008-)
Computer workshop A – Word processing, spreadsheet and presentation software - (2008-)
Computer workshop D – Java programming - (2014-)
Computer workshop E – Security - (2009-2012)
Computer workshop F – Web authoring - (2009-2012)
Mathematics and computer A – Information technology and programming - (2008-2011)
Mathematics and computer B – Java programming - (2008-2011)
Data analysis (2009)
Basic financial mathematics (2012-)
Applied financial mathematics (2010-)
Basic study skill (2010, 2012-)
Business Simulation (2011-2012)

At Nursing School of Matsudo City Hospital:

Life and Science (2005)

At Kitasato University:

Environmental science (2012)