# Professor

and a Special Adviser to the President of The University of Tokyo
Department of Civil Engineering
Graduate School of Engineering
7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan
Phone: 03-5841-0504, Email: oki@civil.t.u-tokyo.ac.jp


## History of Major Employments

**2020 Professor (cross-appointment until Sep 2021, full time since Oct 2021)**
Department of Civil Engineering, Graduate School of Engineering, The University of Tokyo

**2018 Professor (cross-appointment) (and a Special Adviser to the President of The University of Tokyo)**
The University of Tokyo Institutes for Advanced Study, Integrated Research System for Sustainability Science, Japan

**2016 Senior Vice-Rector of UNU and Assistant Secretary-General of UN (cross-appointment until 2021)**
United Nations University, Tokyo, Japan

**2006 Professor**
Institute of Industrial Science, The University of Tokyo, Tokyo, Japan

**2002 Associate Professor**
Research Institute for Humanity and Nature, Kyoto, Japan

**1997 Associate Professor**
Institute of Industrial Science, The University of Tokyo, Tokyo, Japan

**1989 Research Associate**
Institute of Industrial Science, The University of Tokyo, Tokyo, Japan

## Degrees

**1993 Ph.D. (Engineering)**
The University of Tokyo, Japan

**1989 M.S. (Engineering)**
Department of Civil Engineering, Faculty of Engineering, The University of Tokyo, Japan

**1987 B.S. (Engineering)**
Department of Civil Engineering, Faculty of Engineering, The University of Tokyo, Japan

## Narrative of Research Experience

Prof. Oki has made important contributions across a number of scientific fields over the last two decades. His most important and wide-reaching work has been in demonstrating the connections between the hydrologic cycle, renewable water resources, the global economy, and sustainability culminating in his 2006 paper in *Science*. Prof. Oki has demonstrated the inequitable connections between local hydrologic sustainability, climate, and macroscale socioeconomic pressures. Early in his career Prof. Oki developed a global river routing dataset for climate applications, Total Runoff Integrating Pathways (TRIP), which continues to be widely used around the world to study large-scale hydrology and the water cycle. It is a part of many climate models including those used in assessments by the Intergovernmental Panel on Climate Change (IPCC). He and his students have made

numerous advances in numerical model development in many aspects of the global and regional hydrologic cycles, in particular, the incorporation of human activities such as reservoir operations and irrigation withdrawals has opened up new horizon in global hydrological modeling. Prof. Oki's work frequently bridges the gap between hydrology and climate research, including pioneering studies of the evaporative origins of rainwater around the globe based on stable water isotope tracing. Prof. Oki has also contributed innovative research in the assessment of risks and vulnerabilities in water resources at a range of scales from single basins to global. He has contributed chapters to a dozen scientific books, and participates frequently in public outreach and education, also winning awards for science communication and promotion.

## Major Publications

- Y. Satoh, and co-authors including T. Oki, 2022: The timing of unprecedented hydrological drought under climate change, *Nature Communications*, **13**, 3287.
- Takakura J. et al., including T. Oki, 2019: Dependence of economic impacts of climate change on anthropogenically directed pathways, *Nature Climate Change*, **9**, 737-741.
- Cuthbert et al., including T. Oki, 2019: Observed controls on resilience of groundwater to climate variability in sub-Saharan Africa, *Nature*, **572**, 230-234.
- Fukuda, S., N. Keigo, and T. Oki, 2019: How global targets on drinking water were developed and achieved, *Nature Sustainability*, **2**, 429-434.
- Veldkamp, T.I.E. , and co-authors including T. Oki, 2017: Water scarcity hotspots travel downstream due to human interventions in the 20th and 21st century, *Nature Communications*, **8**, 15697.
- Pokhrel, Y., N. Hanasaki, P. J-F. Yeh, T. J. Yamada, S. Kanae, and T. Oki, 2012: Model estimates of sea-level change due to anthropogenic impacts on terrestrial water storage, *Nature Geosci*, **5**, 389-392.
- Oki, T., and S. Kanae, Global Hydrological Cycles and World Water Resources, 2006: *Science*, **313**, 1068-1072.
- Koster, R.D., and co-authors including T. Oki, 2004: Regions of strong coupling between soil moisture and precipitation, *Science*, **305**, 1138-1140.

## Major Honors and Awards

- 2024 Stockholm Water Prize
- 2023 John Dalton Medal, European Geosciences Union
- 2021 International Hydrology Prize (Dooge medal)
- 2014 AGU Fellow, American Geophysical Union
- 2011 Biwako Prize for Ecology, The Ecological Society of Japan
- 2009 Award for Persons of Distinguished Services to the Promotion of Science and Technology related to Ocean
- 2008 Japan Academy Medal, The Japan Academy
- 2008 JSPS PRIZE, Japan Society for the Promotion of Science
- 2003 IAHS Tison Award

## Major Professional Society Memberships

- American Geophysical Union (Fellow, 2014)
- Club of Rome (Full member since 2020)
- Engineering Academy of Japan (Board member)
- International Association of Hydrological Sciences
- Japan Society of Civil Engineers (Fellow)
- Japan Society of Hydrology & Water Resources (President)
- Meteorological Society of Japan
- Science Council of Japan (Member since 2020)