



**The DFG Research Training Group on Urban Water Interfaces (UWI) invites to a guest lecture by**

**Assist. Prof. Eiichi Furusato  
Graduate School of Science and Engineering,  
Saitama University, Japan  
Thursday, 22<sup>nd</sup> March 2018, 2 – 3 pm, IGB lecture hall,  
Müggelseedamm 310, 12587 Berlin**

**Lecture title: *Stratified flow hydraulics and aquatic ecology as a basis for strategic water resource and environmental engineering - preventing harmful cyanobacteria blooms for sustainable development of the ecosystem and to mitigate the impact of future climate change on reservoirs***

*Abstract*

In the past, great scientific and engineering efforts have been made by many scientists and engineers in various research areas. However, unfortunately, even now, environmental/water quality problems in lakes and reservoirs subsequent to eutrophication and harmful cyanobacteria bloom have been unresolved in many water bodies in various areas.

Furthermore, recent economic development in many developing countries and future climate change will intensify the seriousness and importance of the problems due to the increase in nutrient concentration and temperature/stratification.

In Japan, for about 30 years, various scientific studies and technology developments have been made on the physical, chemical, biological, and ecological processes and mechanisms related to these problems. In particular, Japanese R & D has referred to the knowledge obtained by leading researchers in Europe, including Germany, and the United States. As a result, recently, water quality and aquatic environmental problems in Japan have been solved to a certain extent.

The basic processes of physicochemical and ecological phenomena in lakes and reservoirs are common regardless of region. On the other hand, the dominant factors of physical chemistry and ecological processes in actual lakes and reservoirs are governed by geological characteristics (weather, topography, etc.). Therefore, an individuality/uniqueness exists for each water area, and when considering efficient and reliable countermeasures, it is necessary to fully consider such regional uniqueness, such as the differences between Japan and Germany. Furthermore, when water quality conservation measures are applied locally, there may be conditions that were unanticipated by previous studies on natural waters bodies due to large-scale changes in artificial environmental conditions. This leads to the necessity of new scientific research.

In this presentation, I will describe several scientific and engineering studies I have carried out so far with regard to the technology applied mainly in Japan and its scientific basis based on the properties surrounding the above-mentioned water resource quality control technology. And, by exchanging opinions with German researchers with different geological backgrounds, I hope to develop a future vision for interdisciplinary research and contribution to sustainable water resources management.

*About the speaker*

Eiichi Furusato is an assistant professor at the Department of Civil and Environmental Engineering working in the Graduate School of Science and Engineering at Saitama University, Japan. He has been awarded several prizes from the Japanese Society of Dam Engineering and the River Foundation and has published more than 30 peer-reviewed publications.

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