



Presented By:
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University of California, Irvine

Environmental Engineering *Seminar Series*

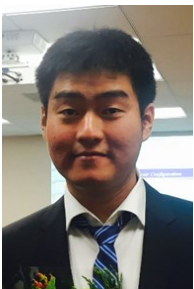
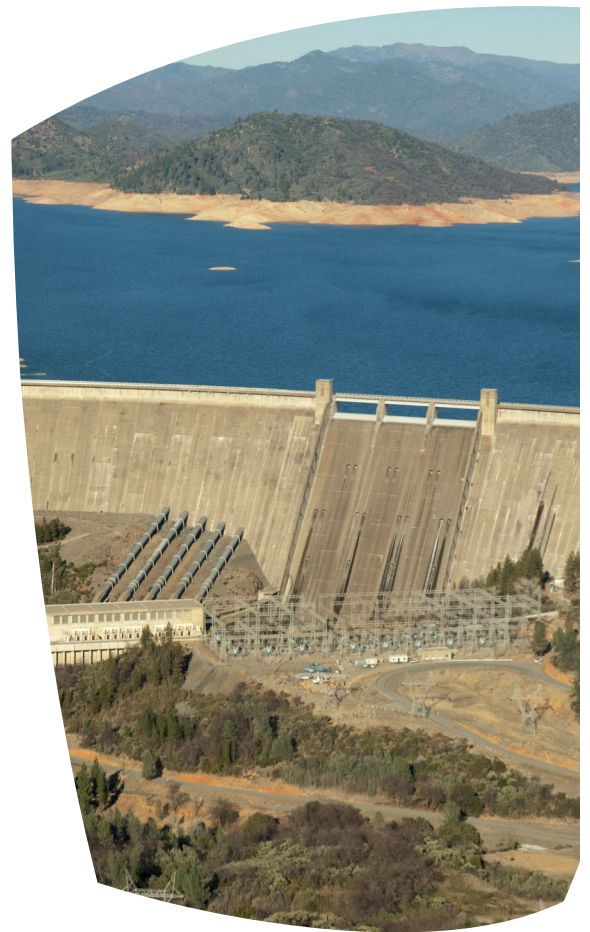
Friday, February 19th 2016

MDEA

1:30PM - 2:30PM

A Framework To Provide Optimal Management Strategies For California's Reservoirs In Achieving Sustainable Water Supply & High Hydropower Productivity

With the increasing demands on freshwater and clean energy due to population growth and impacts of climate change, the stresses on natural resources are increasing worldwide. Therefore, efficient operation of reservoir systems with the intention of optimizing sustainable water supply and hydropower production is crucially needed by policy and decision makers as well as water users. A synthetic framework, including advanced analytical tools, decision making support tools, and optimization models would benefit the operation efficiency and system gains. Taking the reservoir system as an example, a decision tree based approach is built to analyze the influence of both hydrological and non-hydrological information, such as policies and regulation, on the operation of major reservoirs in California. Furthermore, the artificially generated reservoir releases are optimized with regard to water supply and hydropower generation objectives to produce operation recommendations in a cascade reservoir system in the northern California.



Dr. Tiantian Yang is a postdoctoral scholar in Hydrology and Water Resources at the Center for Hydrometeorology & Remote Sensing (CHRS), Department of Civil & Environmental Engineering, UC Irvine. He earned his Bachelor's degree in Mechanical Engineering (2009) from Tsinghua University, China and his Master's degree from Mechanical & Aerospace Engineering at the University of California, Irvine (2011). In 2015, he earned his Ph.D. degree in Civil and Environmental Engineering from UCI. Dr. Tiantian Yang's research interests include water resources management, reservoir system operation and optimization, and heuristic search algorithms.