

유역/저수지 모델링 분야 국외 저명인사 초청 기술세미나 계획안

「위성정보 빅데이터 활용 국토종합관리 기술개발 사업」의 세부 기술 개발 (저수지 수체변화 유역/저수지모델 구축 기술개발) 관련, 본사 및 외부 학계 등에 연관 기술 및 주요 연구 성과 공유 목적 유역/저수지 모델링 분야 국외 저명인사 초청 기술세미나 개최(수자원학회 대전세종충청지회 공동)

I 개요

- (행 사 명) 유역/저수지 모델링 분야 국외 저명인사 초청 기술세미나
- (행사일시) '25. 6. 30(월) 16:00 ~ 18:00
- (행사장소) K-water연구원 1층 대회의실
- (참 석 자) K-water연구원 및 외부 학계(수자원학회 대전세종충청지회, 홍보/참석 협조 등 공동 개최), 초청 전문가 (Venkatech Merwade 교수, h-index 42) 등 25인 내외
- (행사내용) 수리/수문 모델링 기술 프로젝트(미국 사례) 소개 및 과제 주요 연구 성과 발표 정보 공유 등

II 일정 계획

일시	내 용	비고
16:00~16:05	참석자 및 세미나 개최목적 소개	조영현 책임 안국현 교수 <학회 간사>
16:05~17:35 (90')	수문/수리 모델링 기술 프로젝트(미국 사례) 소개 ※ SWAT, ICPR, HEC-HMS/RAS, SWATShare, PIMORPHIS "Improving hydrologic and hydraulic predictions from basin to reach scale"	Venkatech Merwade 교수 <Purdue U.>
17:35~17:55 (20')	주요 연구 결과 발표 "Analysis of Waterbody Changes in Small- and -Medium-Sized Reservoirs Using Optical Satellite Imagery Based on Google Earth Engine"	조영현 책임
17:55~18:00	종합 정리	참석자 전원

Title: Improving hydrologic and hydraulic predictions from basin to reach scales

Abstract: Hydrologic extremes are becoming more intense and frequent around the world. At the same time, human interventions in the form of land use change, urbanization, agriculture, water management, and new infrastructure are altering the hydrologic cycle. How are these natural and human drivers affecting our rivers and flooding risk? Additionally, how can we accurately predict future hydrologic and hydraulic fluxes using different data and tools? This presentation attempts to answer these questions through **a series of case studies that utilize data and computational tools with varying spatial scales and computational complexity.** Specifically, results from studies utilizing Soil and Water Assessment Tool (SWAT), Interconnected Channel and Pond Routing (ICPR), Hydrologic Modeling System (HEC-HMS) and River Modeling System (HEC-RAS) will be presented. The presentation will also include the role of cyberinfrastructure in enabling some of these studies through collaborative social media-type community platforms such as SWATShare and RIMORPHIS for sharing hydrologic models, tools and data.

Bio: Dr. Venkatesh Merwade is a professor in the Lyles School of Civil and Construction Engineering at Purdue University, where he has been since 2006.

He received his BE in environmental engineering from Shivaji University in India, MSc in engineering hydrology from University of Galway, Ireland and PhD in civil engineering from University of Texas at Austin, USA. His research and teaching interests include surface water hydrology with specific focus on flood modeling and mapping. Much of his work has been on improving the simulation of hydrologic processes for flood prediction by using geographic information systems (GIS), data driven techniques and advances in cyberinfrastructure. He has authored more than 100 peer reviewed journal articles related to river channels, watershed hydrology and flood modeling. Some of his recent awards include Education and Public Service Award from the Universities Council on Water Resources (2025), best technical paper award from the ASCE Journal of Hydrologic Engineering (2024), Education and Outreach award from the Indiana Association for Floodplain and Stormwater Management (2024) and highly commended paper award from the Journal of Flood Risk Management (2020). Dr. Merwade disseminates his educational material as online tutorials, modules and YouTube videos, which have been used/viewed by hundreds of thousands of students, faculty and working professionals around the world for learning hydrology, GIS applications, and hydrologic modeling.

