Integrated modeling of hydro-environmental and infrastructure systems

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Abstract: A trend in civil and environmental engineering is toward more integrated, holistic, systems-level perspectives of infrastructure and the natural environment. This is happening most clearly within traditional subdisciplines of civil and environmental engineering. In hydro-environmental modeling of natural systems, for example, recent work has focused on the concept of integrated environmental modeling and the coupling of otherwise independent numerical models as components within a larger hydro-environmental system. But to be most effective, this systems-level perspective should stretch across civil and environmental subdisciplines to order to advance understanding of interactions between hydro-environmental and infrastructure systems. The challenge is how to effectively achieve this integrated perspective given the decades of advancement and community building that has taken place within each subdiscipline. The focus of this talk will be on this challenge and a proposed methodology for systems integration that seeks to maintain existing communities yet still offering a means for integration across communities.