ENVIRONMENTAL ENGINEERING SEMINAR

TUESDAY, APRIL 1ST, 2014

2:30-3:30PM

CALIT2 AUDITORIUM

Some New Ideas on Satellite Rainfall Estimation and Basin Environmental Response with Emphasis on Extremes

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Abstract:

Climatic and human impacts on landscapes are witnessed over a large range of space and time scales and over a cascade of processes (water, sediment, biota). Concentrating on estimation and prediction of extremes is an important aspect of environmental management. Here we will discuss our recent efforts towards two problems:

(1) development of new frameworks for precipitation estimation (downscaling, data fusion, retrieval, and data assimilation) from ground and space-borne sensors with emphasis on preserving extremes; and

(2) development of reduced complexity frameworks for predicting response to environmental change in river basin organization using the old concepts of impulse response function and the newly proposed "dynamic connectivity function" We demonstrate these concepts via application to the Minnesota River basin, an intensively managed landscape where human actions and geologic history converge to produce an amplified hydrologic and sedimentological response threatening water quality and stream biotic life.

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Efi Foufoula-Georgiou is a University of Minnesota McKnight Distinguished Professor in the Department of Civil Engineering and the Joseph T. and Rose S. Ling Chair in Environmental Engineering. She is Director of the NSF Science and Technology Center "National Center for Earth-surface Dynamics" (NCED), and has served as Director of St. Anthony Falls Laboratory at the University of Minnesota. She received a diploma in Civil Engineering from the National Technical University of Athens, Greece, and an M.S. and Ph.D. (1985) in Environmental Engineering from the University of Florida. Her area of research is hydrology and geomorphology, with special interest on scaling theories, multiscale dynamics and space-time modeling of precipitation and landforms. She has served as associate editor of Water Resources Research, J. of Geophysical Research, Advances in Water Resources, Hydrologic and Earth System Sciences, and as editor of J. Hydrometeorology . She has also served in many national and international advisory boards including the Water Science and Technology Board, NSF, NASA and EU proposal review panels, and in several NRC studies.

Questions? Email: CEE@UCI.EDU Phone: (949) 824-5333