



Presented By:
Guy Schumann, Ph.D.
NASA Jet Propulsion Laboratory

Environmental Engineering *Seminar Series*

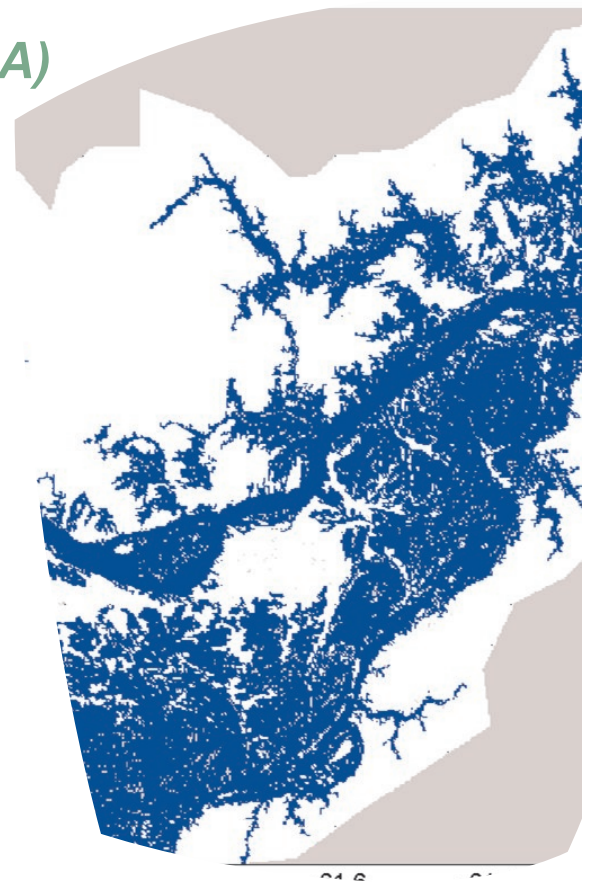
Friday, May 9th, 2014

McDonnell Douglas Auditorium (MDEA)

1:30PM-2:20PM

Toward a First Global Flood Inundation Climatology

To date there is no coherent and consistent database on observed or simulated flood event inundation and magnitude at large scales (continental to global). The only compiled data set showing a consistent history of flood inundation area and extent at a near global scale is provided by the MODIS-based flood maps. Here, we present for the first time a proof-of-concept study in which we employ a computationally efficient 2-D hydrodynamic model (LISFLOOD-FP) complemented with a sub-grid channel formulation to generate a complete flood inundation climatology of the past 40 years (1973-2012) for the entire Australian continent at 1 km resolution. Our proof-of-concept study will serve as a demonstrator case that this type of model setup can be employed to reliably simulate past flood events with reasonable accuracies both in time and space for the entire globe. In this talk, I will present complete simulations results and analysis for the Murray-Darling basin (>1 million square km in size).



Speaker Bio



Dr Guy J.-P. Schumann has been with the NASA Jet Propulsion Laboratory (Caltech) since April 2012 and before that has been with the School of Geographical Sciences at the University of Bristol (UK) working with Prof Paul D. Bates' team on flood modeling. Guy received his PhD at the University of Dundee (Scotland) in 2008 and has extensive experience in the field of remote sensing data integration with hydrodynamic modeling and particularly radar remote sensing and its use in model calibration and validation. He has also done extensive work on flood inundation mapping from SAR and integration of uncertainties. His more recent research focuses on large-scale flood inundation modeling and integration with remotely sensed data.