

CEAE Spring 2012 Seminar

Flood and Ensemble forecasting applications

This talk will be somewhat of a “grab bag” of topics we’ve been working on related to both river flood forecasting and disease forecasting. The first part of the talk will cover the utility of satellite-based flow signals indirectly measuring river-width variations as a tool for river discharge nowcasting and forecasting for the Ganges and Brahmaputra Rivers, in south Asia. This work will potentially allow us to improve the operational flood forecasting ability of an ensemble river discharge warning system that has been operational since 2003.

Slightly shifting topics but staying in the same geographical region, the second part will discuss some recent work of ours covering the impact of climate change on anticipated flood frequency shifts in the Ganges-Brahmaputra-Meghna river basin. Our analysis merges the anticipated variations in upper catchment precipitation with the impact of sea-level rise at the river mouths.

In the third part, we will discuss our use of the Thorpex-Tigge ensemble weather forecast archive to provide information on humidity variations as they relate to meningitis outbreak likelihood over the African meningitis belt. This information is being provided to the World Health Organization and public health representatives of Nigeria, Togo, Benin, and Chad, as they assess how best to allocate limited supplies of vaccines.

Finally, if there is time left over, we will discuss some recent work on verification metrics to tease out the information content in the ensemble error-spread relationship.