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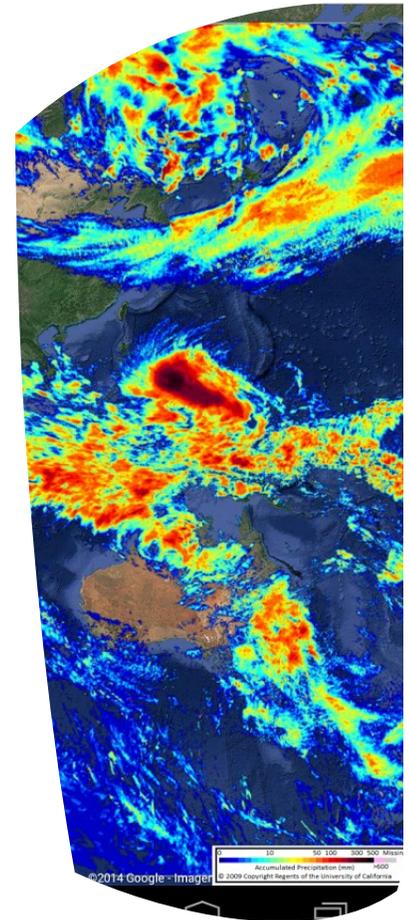
Department of
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Environmental Engineering Seminar Series

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1:30PM - 2:30PM

Progress on Development, Validation & Data Assimilation of Remote Sensing Products of Hydrological Cycle Over the Heihe River Basin in Northwest China

Water cycle is a reflection on the complexity of water interaction among ground, surface and atmosphere. Understanding the water cycle of inland river basin mostly located in arid region is important for local water resource management. The Heihe River Basin (HRB), located in the middle part of the Hexi corridor in the arid region of northwestern China, is the second largest inland river basin and is representative of all of the inland river basins. In order to improve the ability of forecasting and comprehensive analysis on the deduction of water-ecology-economic integrating system under the climate change over the inland basin, since 2010, the “Major Research Plan on the HRB” has been initiated by the National Natural Science Foundation of China, numerous studies on the water, atmosphere, ecology and anthropogenic activities in the HRB have been conducted. From 2008 to 2016, the projects of Watershed Allied Telemetry Experiment Research (WATER) and the Heihe Watershed Allied Telemetry Experimental Research (HiWATER) under the support of CAS Action Plan for West Development Project were carried out in succession to improve the observability of hydrological and ecological processes and to enhance the applicability of remote sensing in integrated eco-hydrological studies at the basin scale. These studies have been crucial in supporting the sustainable development of the inland river basins. This presentation will describe the progress of estimating and evaluating water cycle’s components including precipitation, evapotranspiration, soil moisture, snow water equivalent, runoff and groundwater storage using multi-source remote sensing observation and in situ observation over the Heihe River Basin, and also will introduce the progress of integrating these components with hydrology and land surface modeling by data assimilation to precisely close the land water budget at the river basin scale.



Dr. Xiaoduo Pan is an Associate Professor of Cold and Arid Regions Environmental Institute, Chinese Academy of Sciences. Dr. Pan had received the Monbukagakusho Scholarship, provided by Japanese Government, to study in the Tokyo University of Agriculture and Technology. She is currently a visiting scholar at the Center for Hydrometeorology & Remote Sensing (CHRS), Department of Civil and Environmental Engineering, University of California (Irvine). Dr. Pan’s research is in the area of the hydrologic downscaling, land surface hydrologic process modeling, and hydrologic data assimilation. She has published more than 30 peer-reviewed journal papers