

Project Progress Report

Project Title: Towards Objective Multi-Modeling for Multi-Institutional Seasonal Water Supply Forecasting

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Reporting Period (Year 3): 11/1/2013-04/30/2014

Tasks performed:

- Finished developing the multi-modeling framework based on Bayesian Model Averaging and drafted a journal paper. Currently working on finalizing the paper for submission.
- Started developing a new multi-modeling method based on combination of a multivariate approach called Copula and Bayesian method.
- Continued developing an adapter within CHPS framework for integrating the multimodeling in it
- Continued co-editing a special issue as guest editor in Journal of Hydrology on “Hydrologic Ensemble Prediction and Data Assimilation for Operational Hydrology and Water Resources Management”
- Planning a mini-workshop in June with NWRFC on our progress on multi-modeling and CHPS implementation at Portland State University
- Co-organized and -chaired sessions for the American Geophysical Union meeting held in San-Francisco, December 2013. Topic: Advances in Hydrometeorological Predictions and Applications
- Started co-organizing sessions for the American Geophysical Union meeting to be held in San-Francisco, December 2014. Topic: Advances in Hydrometeorological Predictions and Applications

Papers:

- Najafi, M.R. and H. Moradkhani, Statistical, Ensemble or objective Multi-Modeling of Seasonal Forecast? to be submitted.

- DeChant C.M., and H. Moradkhani, Development of a Probabilistic Seasonal Drought Forecasting System through a Holistic Approach in Error Characterization, *Advances in Water Resources*.

Invited Presentations:

- Quantifying the Uncertainty in the Assessment of Climate Change Impact on Hydrologic Extremes using Hierarchical Bayesian Modeling, Society for Industrial and Applied Mathematics (SIAM), symposium on Uncertainty Quantification and Reduction in Environmental Fluids, Savannah, Georgia, March 2014.
- Assessment of Climate Change Impact on the Hydrology of the Columbia River Basin Using Multi-modeling, International Columbia Basin Climate and Hydrology Assessment Workshop, Portland, Oregon, January 2014

Personnel Involved in this Period:

Dr. Hamid Moradkhani

Dr. Shahrbanou Madadgar

Caleb DeChant, PhD Student

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