


Identification of Parameter Dominance in a Macroscale Hydrologic Model

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Sources of Uncertainty in Hydrologic Prediction

- Input Variables (precipitation, temperatures, wind speed, etc.)
 - Initial conditions (soil moisture, temperature, snow cover, etc.)
 - Model parameters
 - Model physics (eg. Subgrid parameterization)
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Ensemble Prediction

- Which of these should be perturbed to generate ensemble?
- How do we decide on a subset of variables?
 - Understand model sensitivity to various parameters, individually and in correlation with each other
 - Select the variables to which model is most sensitive to
- Issues:
 - Too many parameters and combinations
 - Depends on the underlying model
 - Should we generate a different ensemble for each model and analyze across models?

Parameter Dominance

- We define PD as the identification, within a group of dependent parameters, of those parameters to which the model is most sensitive.
- Use Latin-Hypercube sampling