

Working Group 2: Datasets and models

- Overall Question: What datasets and models are required to answer the primary HEPEX science questions?
 - Discuss atmospheric forecast archives, hydromet datasets (prcp, temp, snow, streamflow, basin characteristics)
 - Can datasets be better organized to decrease processing time for individual investigators?
 - How can we provide some generic modelling architecture to decrease analysis time for individual investigators?
 - How can datasets be organized / distributed for regional testbeds?
 - Data formats, ...
 - How can HEPEX interact with other international projects (e.g. TIGGE)?

Weather and Climate Forecasts

Single-value and ensemble forecasts

To what extent will land surface states improve weather and seasonal climate forecasts?

Ensemble Processor

HEPEX Example Science Questions related to Modeling and Data

Inputs

Method/s

Cal

Ensemble initial conditions

and how can these methods be combined?

Product

How does uncertainty in surface initial states affect the uncertainty in hydrologic ensembles?
Are multi-hydrologic models forecasts more skillful?
What is the best method for combining diverse hydrologic forecasts and information?

Products

Weather and Climate Forecasts

Potential HEPEX activity:
Participate in COPEX Task Force on Seasonal Prediction to study the impact of land information on predictive skill.

Single-value and ensemble forecasts

Ensemble Processor

HEPEX Example Research Activities Related to Modeling and Data

Inputs

on
mical
ing

and statistical downscaling
methods

Ensemble initial conditions

Product

Potential HEPEX activity:
Influence of initial land state uncertainty versus atmospheric forcing uncertainty
Influence of space and time scales on hydrologic predictive skill

c products

HEPEX data needs:

1. Land/basin characteristics for LSM
2. Accurate input forcing data for LDA
3. Validated LDA hydrologic outputs (e.g. soil moisture, snow properties, streamflow)

Climate Forecasts

Single-value and ensemble forecasts

Ensemble Processor

HEPEX Example Data Needs Related to Modeling and Data

Assimilator

HEPEX data needs:

1. Archive of current and hydrologic forecasts for validation studies and evaluation in decision making

ensemble forecasts.

2. Use the above with long-term historical observational data for downscaling and bias correction at appropriate hydrological scales.

Product Generator

Reliable hydrologic products

Products and Services

Implementation of the above....

TBD