

Water Balance Modelling Evaluation through Mapping the Hydrological Pattern to Information Space

Results & Discussion

November 28, 2014

The MI(Input;Observation) & MI(Output;Observation) at different

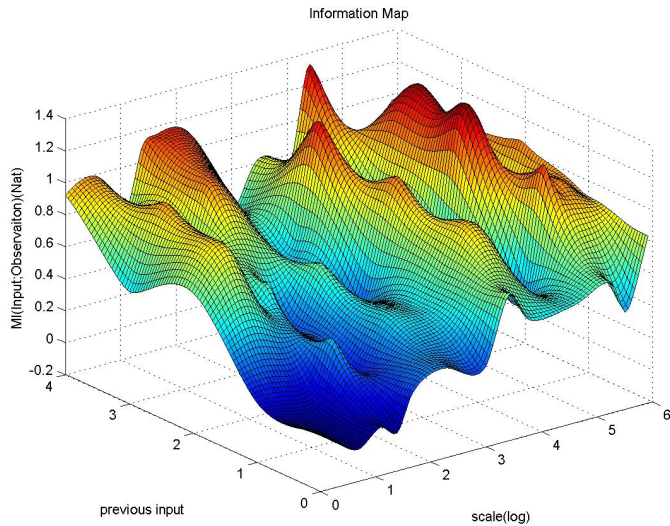
- Simulation_ Scale
- Previous_ Input
- Simulation _ Time

4 d \rightarrow 3 d \rightarrow 2 d

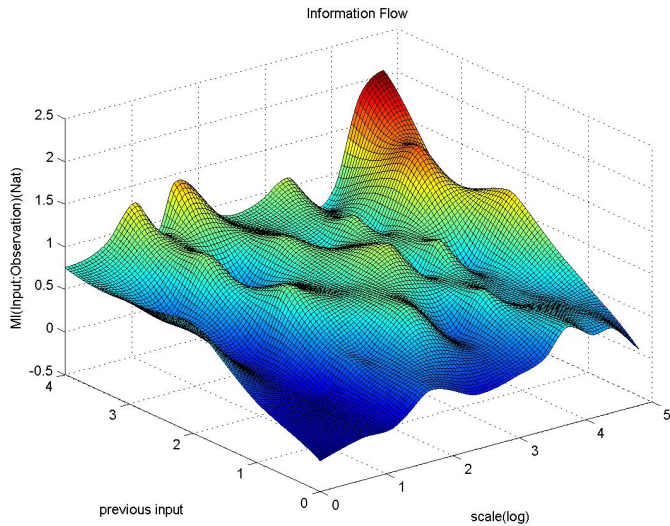
Simulation_Time-Mutual Information Slice

The uniformity of the Simulation_Time-Mutual Information Slice represent a possible constant performance of an ideal model when applied in different atmospheric situations.

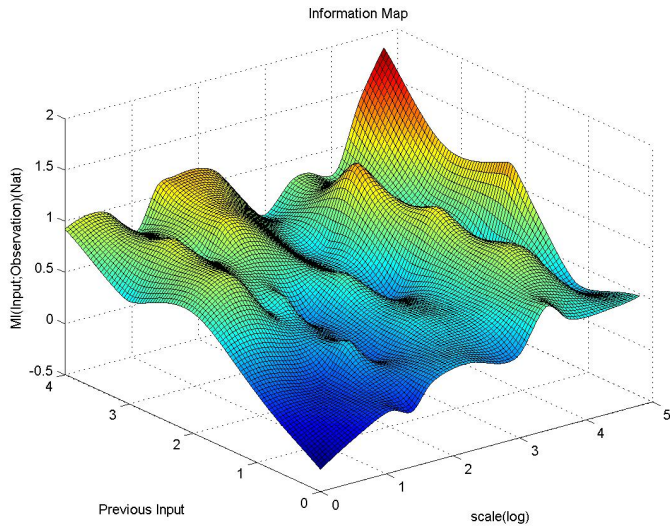
Results



Results



Results



Previous_ Input-Mutual Information Slice

The first stationary point of the Previous_ Input-Mutual Information Curve of small simulation scale represent the convergent time.

That of the larger simulation scale represent how the former hydrological condition effects the water movement.

The previous input value of the first stationary point becomes smaller and smaller as the simulation scale expands, disappears at the scale of 40 at this watershed. This is the time-scale where non-iterative model structure could provide satisfactory results.

Simulation_ Scale-Mutual Information Slice

The first stationary point of the Simulation_ Scale-Mutual Information Curve of no previous input represent point when Budyko water-heat correlation dominates the hydrological circulation.

Simulation_ Time-Mutual Information Slice