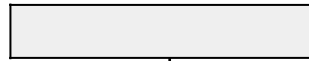


## Framework

## Key points

Calibration period

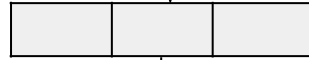


Extraction of dynamic catchment characteristics

Climatic and land surface indices

Preprocessed using MIC and PCA

Subperiod



Clustering operation I

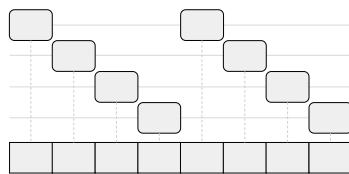


Clustering operation II

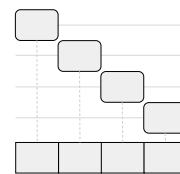
- Indices are specified with dynamic catchment characteristics.
- Multiple clustering operations based on different index systems.

Calibration operations

Calibration period



Validation period



Different subperiod for objective function

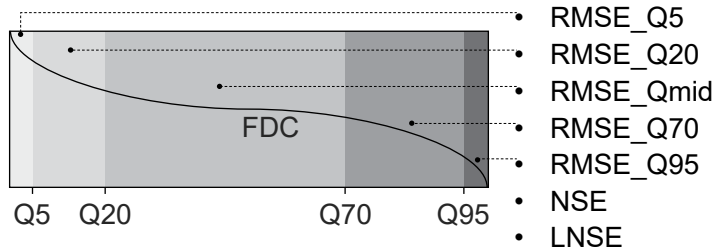
- The effects of the potential correlation between the parameters on the subperiod calibration.

Linear and nonlinear correlation between parameters



Parameter

Assessment of model performance



- The effects of the number of multiplying parameters on the subperiod calibration.
- The effects of the temporal memory in the model states between two adjacent subperiods on the subperiod calibration.