

Identification of contrasting rainfall regimes

**Calibration using regime type:
wet years**

**Calibration using regime type:
dry years**

Hydrological model

Model parameter estimation

**Verification using regime type:
dry years**

**Verification using regime type:
wet years**

**Projection performance
evaluation**

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evaluation**

**Vivid input from spatially
coherent catchments**

Hierarchical framework

Level 1: temporal variability

$$\theta_m = \alpha(c) + \beta(c) \sin[\omega(c)t]$$

Level 2: spatial coherence

$$\beta(c) = N(\mu_2, \sigma_2^2)$$

$$\omega(c) = N(\mu_3, \sigma_3^2)$$