

Third-order **Markov chain model** to generate time series of rainfall occurrence

Extract rainfall events and **determine rainfall duration** of each rainfall event

Stochastically **generate rainfall depth** for each rainfall event

Determine the event class of each rainfall event (Gao et al., 2020b)

Stochastically **generate a rainfall type** and **simulate its corresponding rainfall pattern**

Allocate rainfall duration and depth according to the rainfall pattern for each rainfall event to obtain rainfall time series

