

Input

Weather Patterns

Daily time series of weather patterns.
Weights of the weather patterns are shown in figures S1, S2

Sea surface temperatures

Daily time series of SSTs averaged over the main development region (10°N-20°N 90°W-20°W), see figure S6

Emulator Components

Storm formations

Probability of:

- **Weather**
- **Weather on the two days before**

Storm Duration

Probability distribution function depending on:

- **Weather**

Storm intensities

Probability distribution function depending on:

- **Weather**
- **SST in the MDR**
- **Intensity on the day before**

Emulator

for each day in season:

if new storm emerges:

estimate storm duration

for each active storm:

estimate max. wind speed

Output

A list of storms with daily storm intensities for each day and each storm