Define settings  
e.g. # years, area of interest, point per KDE

Construct statistics of original data  
e.g. probability genesis/termination, Markov-chains

Compute cyclone genesis  
i.e. time, location and $v_{\text{max}}$, $c$, and $\theta$

Simulate synthetic tracks  
every time step

Compute new location and intensity  
Randomly sample the three TC variables  
Intensity ($v_{\text{max}}$), forward speed ($c$) and heading ($\theta$)

Compute landward decay  
landward decay based on Kaplan and De Maria (1995)

Terminate track  
a. probability, b. wind speed, c. SST

Validate track

Finalize tracks

Track simulation complete

Create temporally and spatially varying surface wind field maps via Holland wind profile

Create wind swaths (extreme wind velocities)  
Based on defined return periods both non-parametric and parametric (POT/GPD)