Dataset title: tc_dataset_extended.mat

Principal investigator: Veronica Nieves, veronica.nieves@uv.es

Contact: Javier Martinez-Amaya, javier.martinez-amaya@uv.es

File name structure: tc_both_regions

The new dataset version contains a structure that includes the following attributes and variables. It relates to the combined regions of the North Atlantic Ocean and Northeast Pacific Ocean for enhanced analysis:

Attributes and variables: The structure, which consists of tropical cyclone (TC) characteristics, now encompasses information about the temporal evolution of the TC parameters across the complete time range – from TC formation to a specific lead-time. The mean and standard deviation are calculated over each period of time. Additionally, it incorporates spatial features derived from a CNN algorithm, which was developed with a receptive field of 256 pixels. These spatial features are generated for each lead-time

area = mean and standard deviation of the TC area.
diffT = mean and standard deviation of the temperature difference between the inner and the outer part of the TC cloud.
eccentricity = mean and standard deviation of the TC eccentricity.
circularity = mean and standard deviation of the TC circularity.
CNN_spatial = the spatial features of the nearby and within the TC cloud system as captured by the CNN model.
class = final class (Tropical Storm = 0; Major Hurricane = 345).