Dataset title: med_dataset.mat

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File name structure: medicanes_dataset

This dataset encompasses a structured collection of attributes and variables specifically related to the Mediterranean Sea region:

Attributes and variables: This dataset's structure encapsulates the characteristics of Medicanes (MED), focusing on their temporal and spatial evolution throughout the full time range, from initial formation to a specific lead-time. Key details include:

1. Temporal Evolution:
   Parameters are tracked over time, with mean and standard deviation computed for each time period.
2. Spatial Features:
   Derived using a Convolutional Neural Network (CNN) with a receptive field of 256 pixels. These features are generated for each lead-time to provide insights into the spatial characteristics of the MED cloud system.
   - area = mean and standard deviation of the MED area.
   - diffT = mean and standard deviation of the temperature difference between the inner and the outer parts of the MED cloud.
   - eccentricity = mean and standard deviation of the MED eccentricity.
   - circularity = mean and standard deviation of the MED circularity.
   - CNN_spatial = spatial features of the area within the MED cloud system, captured by the CNN model.
3. Class:
   - 0: Weak Medicane
   - 1: Extreme Medicane