Lightning Forecasting Based on Eastern Amazon Radiosonde Data

(Lightning Occurrence Relative to Meteorology)

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ABSTRACT: Radiosonde data are important components of the weather predictions. This study presents and evaluates a method developed for lightning forecasting in eastern Amazonia, based on the radiosonde data mining (geopotential height, temperature, dewpoint temperature, relative humidity, mixing ratio, wind direction and wind speed). The software developed using this approach, was designed with K-Means and K-Nearest Neighbors techniques, where its inputs are values of the variables for the standard levels of atmospheric pressure and the outputs are lightning predictions for Belém city. The final evaluation of the results indicated that the software can predict, twelve hours in advance, lightning occurrence in the area, with an accuracy level above 80%.