



Hot Spot Analysis of fires in the State of Rio de Janeiro

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Forest fire is a phenomenon that can occur naturally or due to anthropic influence, this phenomenon has the capacity to propagate through large territorial extensions and to carry out an investigation on forest fires, which we must consider three components in the environment that promote the fire: fuel, topography and climate. The present study aimed to perform the spatiotemporal analysis of the fire sources in the State of Rio de Janeiro with data from the fires recorded through the Visible Infrared Imaging Radiometer Suite (VIIRS) in the Suomi National Polar-orbiting Partnership (NPP) -SUOMI). And correlated the foci with different conditions such as slope orientation, slope, altimetry, land cover, rainfall and also with NDVI of the area in question.

For this, the study used the data available in the Burned Program portal of the National Institute of Space Research (INPE), which belong to the Queimadas Database (BDQueimadas). In this way, historical data were collected (1998 to 2017), where it was decided to work with 2014, since it was the most critical year for the region. Regarding the spatial analysis, the software QGIS version 2.18 and ArcGIS 10.2 were used, in ArcGIS the tool "Hot Spot Analysis (Getis-Ord G_i^*)" was executed. Tool that identifies statistically significant spatial clusters of high values (hot spots) and low values (cold spots). It creates a new Output Feature Class with a z-score, p-value, and confidence level bin (G_i_Bin) for each feature in the Input Feature Class.