ABSTRACT

For Indonesia, land and forest fires are a major yearly disaster and causing loss for the nation and people. Maps of the forest and land fire use hotspots identified by satellite should be attempted as a result. Clustering is one type of data processing that helps with hotspot mapping. This study uses ST-OPTICS (Spatio-Temporal Ordering Points to Identify the Clustering Structure), a density-based clustering technique because spatiotemporal data is suitable if mapping by density and ST-OPTICS use local density. Data that has been processed by the best parameter makes 253 clusters and 2633 points are defined as noise, from 253 clusters 51 are defined as large clusters that can analyze the pattern of the clusters. Only 8 clusters that analyze. The pattern of the observed clusters are track, that the cluster is moving or expanding from the previous period. The time interval of the clusters is mostly in July until September/October. The geography of clusters is different: clusters 61, 80, 179, and 187 are located in east Indonesia so mostly dominated by savanna, clusters 42, 125, and 134 are dominated by oil palm land and community land, and cluster 68 dominated by national park.

Keywords: Data mining, density-based clustering, land and forest fires, spatio-temporal data, ST-OPTICS