Sliding window-based spatio-temporal clustering of lightning data

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ABSTRACT: In this work, we introduce a novel way of clustering spatio-temporal data based on a temporal sliding window. The sliding window algorithm is employed, for instance, for data flow control in networks. The spatio-temporal clustering was applied to lightning data in order to track the evolution of the electrical activity associated to convective storms in space and time. As a result, it is possible to define these clusters as being nuclei of atmospheric electrical activity and to calculate the corresponding position of the centroid, the number of lightnings, or the neutralized electrical charge.

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