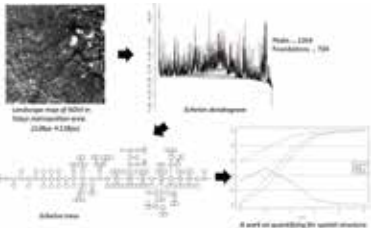




Visualization of spatio-temporal information and structural analysis by Echelon tree structure

In recent years, the analysis target of statistical science has become complicated, especially in spatial data, it is necessary to analyze the data with time series and multi-dimension in addition to usual fixed time and space situation. Furthermore, the amount number of data has been increasing.



For these complicated and large-scale spatial data, we will develop the hierarchically representational approaches based on "Echelon analysis" by using the geographical and temporal positional information of each region. The echelon provides a dendrogram representation of the surface topology of graph-theoretic analysis and surface structure comparison. The echelon dendrogram is a powerful tool that expresses a unified framework to handle lattice data with visualization.

Detection of spatial cluster for large scale spatial data

The detection of problems such as the generation status of infective diseases or hazard maps of natural disasters is very basic and important. Some powerful and useful tools such as geographical information systems (GISs) are available, but it is very difficult to determine the location of space-time clusters for various types of spatial data in large quantities or with large time series.

The aim of this study is to establish methods to identify a disease cluster or a contaminant cluster, so-called hotspot, for various kinds of spatio-temporal spatial data and to develop software for that.

