Spatio Temporal Interpolation of a Field of Different Configurations

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Abstract

The definition of a spatial field refers to a set of associated elements, where each element contains a value and a location. In Most studies in hydrology are given different types of spatial fields and this is made up of observed field collected by in-situ measurements which are usually made up a set of points , which have spatial relationships defined in some manner and its elements are related to one another via a specified topology, which may or may not be inherent to the field structure.

Some observed spatial fields have an irregular element structure but they are often processed as regular structure to be consistent with other data sets. Therefore, by using some assumptions and/or scaling relationships the elements can be changed between different structures. This involves some form of interpolation.

This paper wants to show a spatial interpolation algorithm for a field of precipitation, taking into account the different configurations of the grid according to two different types of neighborhoods. The measurement of algorithm performance be carried out at different scales spatiotemporal to quantify the uncertainty