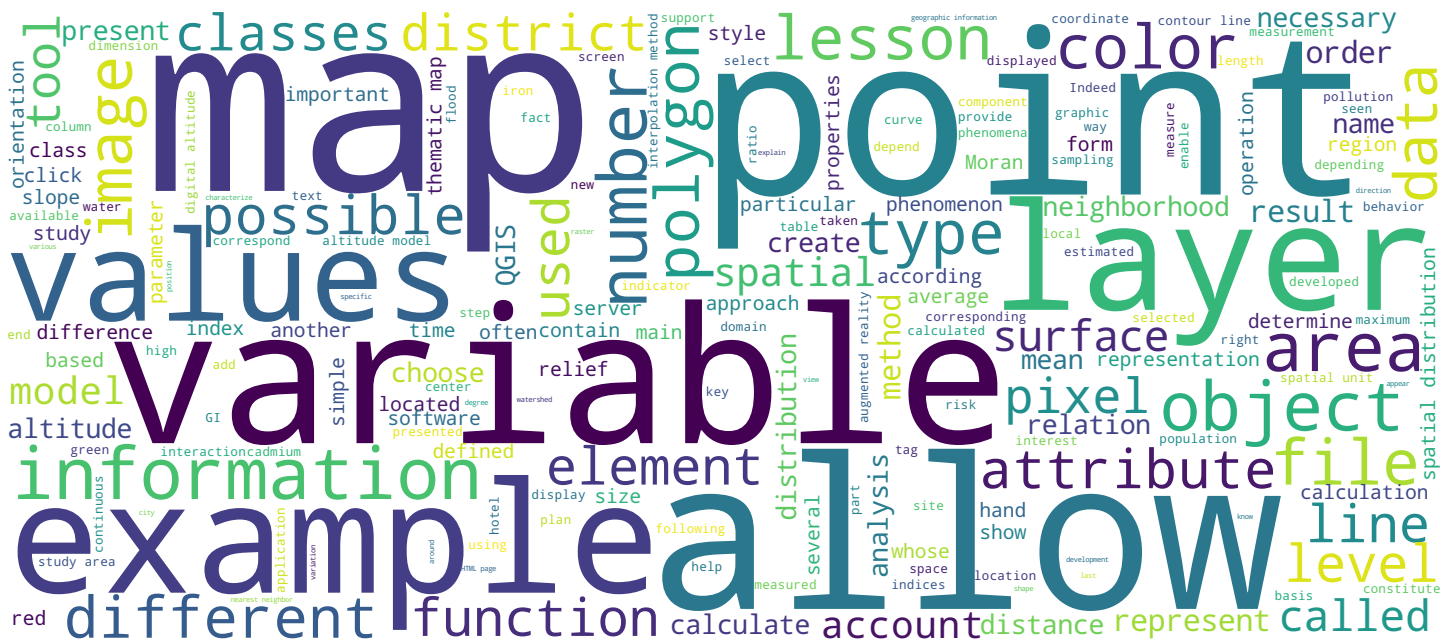


Summary

Continuous Spatial Phenomena – Interpolation 1

Geographic Information Systems

Stéphane Joost, Marc Soutter, Fernand Kouamé, Amadou Sall



Search MOOC



Video



Summary

- Deterministic interpolation requires *a priori* knowledge of the phenomenon in order to choose the most appropriate method
- There are different methods of deterministic interpolation: global (polynomial regression) or local (nearest neighbour, triangulated irregular network, B-spline, inverse distance weighting)
- Arbitrary choice of method, source of uncertainty



Geographic Information Systems

In this presentation, we focused on deterministic interpolation methods. These deterministic methods are not based on any prior statistical study of the phenomenon studied. There are two big categories: either global approaches, which allow to carry out the interpolation, taking into account the totality of the measurement points included in a domain. And local approaches, which take into account only a limited number of points of support, to the neighborhood of the point to be estimated, and which allow the assignment of specific weights at each measuring point, especially depending on the distance to the point to be predicted. Global methods are often too simple to provide a realistic approximation of the spatial distribution of the variable to be predicted. And that's why local interpolation methods are preferred. But these local approaches, like the approach of the nearest neighbor, or the inverse distance weighting, are very empirical and depend very much on the subjectivity of the analyst. They therefore often produce arbitrary results, which imply the existence of a significant uncertainty.

Notes

Summary

