

Geospatial flow data extraction and visualization using Earth mover's distance

Authors: Adam Mertel, Justin M. Calabrese

Summary:

A flow map is a common visualization technique displaying the significant trends and changes in data over a given spatial and temporal domain. While most flow maps are constructed using trajectory datasets as input, only a few research initiatives focus on producing flow maps from other data forms. This paper uses the Earth Mover's Distance to extract flows from geospatial data in two consecutive temporal snapshots. We further perform a generalization of the flows to avoid visual cluttering. To demonstrate the proposed approach, we provide an interactive web application where the user can see the pre-calculated flows extracted from the 2021 COVID incidence data in the regions of Germany, Poland, and Czechia, accessible at <https://adammertel.github.io/flow-extraction/>.