

1096-68-2002 **Carola Wenk*** (cwenk@tulane.edu), Tulane University, Department of Computer Science, 6823 St. Charles Ave, New Orleans, LA 70118. *On map construction and map comparison.*

Map construction is a new type of geometric reconstruction problem in which the task is to extract the underlying geometric graph structure described by a set of movement-constrained trajectories, or in other words reconstruct a geometric domain that has been sampled with continuous curves that are subject to noise.

Due to the ubiquitous availability of geo-referenced trajectory data, the map construction task has widespread applications ranging from a variety of location-based services on street maps to the analysis of tracking data for hiking trail map generation or for studying social behavior in animals.

Several map construction algorithms have recently been proposed in the literature, however it remains a challenge to measure the quality of the reconstructed maps. We discuss incorporating uncertainty when modeling the input trajectories and the constructed maps. And we present different approaches to compare two such maps which amounts to comparing two uncertain embedded geometric graphs. (Received September 17, 2013)