

Documents

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Mapping Distance Estimation Functions by Means of City Parameter Optimization

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Abstract

The prediction of intercity distances by means of distance functions has been widely discussed in the field of location analysis. In this study, we develop distance parameter estimations for the region of Saudi Arabia, using two different methodologies for two commonly used functions, the weighted $l_{k,p,\theta}$ norm and the $l_{b1,b2,\theta}$ norm. We first use a more traditional approach of determining global parameters for the country taking into consideration the cities spread across the region. In a second approach, we introduce separate city-wise parameters for all considered cities and use the result to present a new parametric distance map for the country. Finally, we determine the confidence interval of the distance estimators for the two approaches to show that the new mapping method provides consistently a better interval estimates. © 2012 King Fahd University of Petroleum and Minerals.

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