CERIS : Civil Engineering Research and Innovation for Sustainability

A vision on the evolution of the Portuguese road-rail networks since the early twentieth century: Analysis of its impacts on land-use patterns and urban settlement

Summary

Mainly, in the last thirty years, the improvement and expansion of the surface transport infrastructure network in Portugal has shown a significant growth rate. Urban regions are complex systems, with many human/natural interactions. It is important to explore the impacts that transport networks have produced on land use patterns and in the configuration of the urban spatial structures. Adopting a longer time scale of analysis allows us to better disentangle different effects that might not be captured when looking only at shorter time frames. Remote sensing and Geographic Information Systems (GIS) techniques are two efficient ways to evaluate the network spatial information and model urban growth by gathering, processing, and analyzing spatial information. The main objective of this work will be the development of urban growth models to assess the long-term effects of transport on the evolution of land use patterns and urban growth.

Keywords

Transportation, GIS, spatial analysis, network analysis, remote sensing, LUCC models.
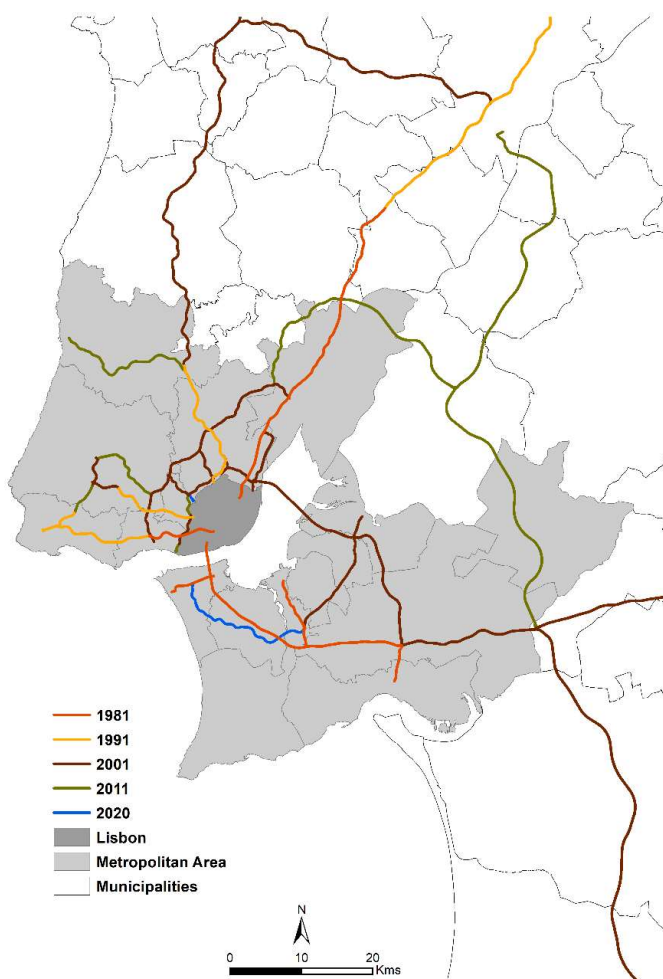
Evolution of the motorway network in the metropolitan area of Lisbon, between 1981 and 2020

PhD student
Nuno Filipe Neves Viegas da Silva Afonso

PhD program
Transportation Systems (IST, University of Lisbon)

Supervisor
João Abreu e Silva (CERIS, IST, University of Lisbon)

Co-supervisor
Patrícia Melo (ED, ISEG, University of Lisbon)

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