



A model of residential location choice with endogenous housing prices and traffic for the Paris region

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Abstract

There is a growing interest in the development and the use of large-scale planning models. In this paper, we describe the first step of a project to integrate UrbanSim, a dynamic microsimulation land use model, and METROPOLIS, a dynamic traffic model. This is the first attempt, to our knowledge, to integrate a dynamic land use model and a dynamic traffic model. We briefly describe the two models and propose a unified framework for their integration. Within this integrated framework we develop a model of residential location choice, with endogenous housing prices and traffic. The study area for this research is the Ile-de-France (Paris region), for which we provide empirical results.

Keywords: Land use; Integrated model; Transportation modelling; Paris area.

Introduction

In metropolitan regions throughout the world, increasing population and urban expansion generate increased transportation congestion and rising housing prices. The need to coordinate land use policies with transportation investments has been widely recognized, but the task remains difficult for both technical and political reasons. Politically, the coordination of transportation and land use is difficult because land use decisions are controlled by local governments that by nature have a parochial mandate, whereas transportation investments are generally coordinated at a metropolitan level to ensure efficient coordination of the regional transportation network. Technically, the coordination of land use and transportation is challenging due to the lack of well-integrated models that provide a coherent behavioural basis to model not only the effects of changing patterns of locations of jobs and households and real estate

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