

## **Activity-based models and four-step trip based models: a comparative research of their performance in Flanders**

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Activity-based modelling has become a main field of interest in transportation research. Several of these models are getting mature and are now being applied in transport planning and policy (e.g. Bowman J.L. et al. (1998); Fuji S. (1998); Arentze T.A. et al. (2000)).

Theoretically spoken researchers do agree that the way in which activity based models predict transport flows is more profound than the methods of traditional four-step models. An important goal of both modelling types is the same: the prediction of an OD-matrix. Where the traditional four-step models just consider individual trips made during a peak hour, the activity based approach takes a complex interaction of household and individual roles, their lifestyles, time and space constraints, ... during a 24-hour period into account. Travel is seen as a derived demand from the activity participation (Mc Nally M. (2000); M. Jovicic G. (2001)).

Currently, however, when it comes to practice the four-step models are still dominant. Most of this is can be explained by the fact that in general the performance of the four-step model predictions is much better than the performance of the predictions made by the activity-based models (e.g. transport flows, modal split).

In this paper we will describe the results of a comparative analysis of these two types of models in the area of Flanders. From a theoretical point of view we will look at the advantages and the disadvantages of the one above the other and we will compare the assumptions made at the beginning of each of the models. Secondly, a comparative research is carried out on the same set of data (derived from a travel behaviour study in a Flemish urban region) with a traditional four-step model (TRIPS) and an activity-based model (ALBATROSS). A special topic of interest will be the modal split predictions in both modelling approaches. Based on the outcomes of the former stage, we will provide theoretical improvements for the performance of activity based models.

## **References**

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