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ABSTRACT

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Title	THE DEVELOPMENT OF TRANSPORTATION RESEARCH METHODOLOGY BETWEEN 1983-2007; Emphasis on traffic flow and traffic equilibrium problems		
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Abstract

The modern computer technology makes it possible to nowadays calculate even more complex equations and make larger models than was possible just a few decades ago. This can also be seen in solving difficult transportation problems, like route choice, and in the modeling of traffic flows and traffic assignment. In addition to having faster computers, also the amount of information available has increased considerably in the past few decades. Because of these reasons, it is good to know in detail about what kind of information is available as well as it's important to start summarizing the vast information base. The purpose of this study is thereby to first take a look at what has been studied in mathematical and methodological transportation research between 1983–2007 and how the focus point of research has shifted during those years. Secondly the thesis also give an overview of what kinds of methods are available in traffic flow and traffic equilibrium studies, which were the most researched topics according to this thesis.

The first part of the study was conducted by categorizing the articles which had been published in the journal *Transportation Research part B: Methodological* between 1983–2007. The categorization was based on what the article had been about and then placed in one or several of the seven categories. After that the total amounts of studies in each category were calculated as well as the yearly totals for all categories. From the yearly totals it was then possible to calculate a trendline, which then showed how the focus of research had evolved.

The category which had the most articles written about was traffic flow and traffic equilibrium. It was also the only well classified category where a trendline was visible. The largest amounts of studies in traffic flow and traffic equilibrium were made in the 1990s. Before and after that the study amounts have been slightly smaller. The changes are however rather small, and even though there has been a slight downwards trend in traffic flow and traffic equilibrium studies after the 1990s, it has still been the most studied topic year after year, a few exceptions excluded. Thereby one can say that the focus point of research hasn't shifted much. The same topics which were studied in the 1980s are still valid, the only difference being that the models and methods have evolved.

In the end of the thesis, there is a short literary review of the methods, which are used in traffic flow and traffic equilibrium studies. Its purpose is to give an initial overview on what kinds of methods there are in traffic flow and traffic equilibrium studies and in which situations the methods are applicable.

Key words	Traffic, Traffic flow, Traffic Equilibrium, Traffic Assignment, Transportation, Traffic networks, Propagation of research
Further information	