Preface

Many transport measures envisaged for the future have a fundamentally dynamic element, ranging from real-time driver information systems to congestion pricing schemes, affecting the temporal distribution of demand and supply systems and their interaction. Developing models able to predict the effects of these measures with sufficient realism, while maintaining properties of interpretability and computational tractability, is therefore of paramount importance. Dynamic Traffic Assignment (DTA) theory aims to model and analyse these effects.

With DTA we refer to a collection of models through which the demand for mobility is distributed over time and space on a transport network. The complexity of this approach lies mainly in finding a convenient trade-off between mathematical tractability and interpretability with a sufficient traffic and behavioural realism. The requirements needed to guarantee the existence, uniqueness, convergence and stability of the solution therefore play a fundamental role as much as those needed to incorporate realistic traffic dynamics and decision-making aspects. Despite its paramount role, DTA theory still needs considerable research efforts in order to provide traffic engineers with practical tools able to represent the traffic systems sufficiently well, and to be consistent with observable traffic phenomena.

This volume contains a selection of works presented at the 2nd DTA Symposium held at the Katholieke Universiteit Leuven, Belgium, in June 2008, and follow up of the successful first symposium which was held in Leeds two years before. The aim of this collection of works is to provide an overview of the recent advances in DTA theory and applications from leading international researchers in the field, and to identify the gaps and major challenges for future research efforts. In the two editions of the DTA symposium several debates on both theoretical and practical issues for solving DTA problems have been proposed on, among other matters, the plausibility and properties of alternative dynamic supply models based on deductive or empirical evidence, solution algorithms, alternative model paradigms, philosophical and practical aspects of DTA problems etc.

Many persons have contributed to make the DTA symposium a great success and have made the preparation of this book possible. A special thanks should be given to Wouter Verbeke and Thomas Verbraken who were the main people responsible for the organisation of the conference. Their work
has raised the standard and will not be forgotten by all participants and colleagues. Precious help was also provided by Ruben Corthout, Rodric Frederix and Xin Lin during the whole event. They were always available to satisfy all the needs of the participants. A big thanks goes also to the Centre for Industrial Management group, which set up a fantastic bar in the city hall of Leuven during the first evening. This created such a friendly and informal atmosphere during the whole symposium and will remain as a great memory for all. For the preparation of this book we are grateful to Jim Stada, who played a determinant role between the editors and the publisher of this volume. Finally we wish to acknowledge the sponsors and the Scientific Committee of the DTA Symposium.

The Editors

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