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Nota di contenuto	Intro -- Organization -- Preface -- Contents -- Measurements and Control in Transport Networks -- Post-Pandemical Regional Transport Demand Variations -- 1 Introduction -- 2 Problem Area Description -- 2.1 Location -- 2.2 Public Transport Supply -- 3 Methodology -- 4 Results -- 4.1 Daily Variation -- 4.2 Weekly Variation-Working Days -- 4.3 Weekly Variation-Weekend -- 5 Discussion -- 6 Conclusions -- References -- Signature of Vehicles Crossing a Detection Field Composed of Image Blocks -- 1 Introduction -- 2 Input Images -- 3 Detection Field -- 4 Parameters of Image Blocks -- 5 Background Blocks -- 6 Classification of Blocks -- 7 Vehicle Signature -- 8 Background Updating -- 9 Experimental Results -- 10 Conclusions -- References -- Passengers Satisfaction with Commuter Rail: A Case Study of Rhine-Ruhr Metropolitan Region -- 1 Introduction -- 2 Literature Review -- 3 Characteristics of the Commuter Rail System Managed by VRR and the Research Methodology -- 4 Analysis of the Results of Passenger Satisfaction Surveys from Commuter Rail -- 5 Analysis of the Results of Passenger Satisfaction Surveys from Individual Operators -- 6 Discussion -- 7 Conclusions --

References -- Traffic Flow Modelling, Optimization, and Simulation -- A Microsimulation-Based Modelling Approach for Connected and Automated Vehicles on Roundabouts -- 1 Introduction -- 2 Microsimulation Modelling with AVs and CAVs -- 3 Data and Methodology -- 3.1 Data Collection -- 3.2 Setting up the Roundabout in Aimsun Next -- 3.3 The Simulation Framework in Aimsun Next -- 3.4 Results -- 4 Discussion and Conclusions -- References -- Modeling of Total Occupancy Curves with Integrated Single Parking Times as Input for Microscopic Traffic Simulation -- 1 Introduction -- 2 Input Data -- 2.1 Regular Parking Ticket Counts by the Park-and-Ride Facility Operator.
2.2 Continues Spot State Observation by Pressure-sensitive Sensors -- 3 Prediction of Daily Occupancy Curves by a Neural Network -- 3.1 Design of the Neural Network -- 3.2 Training and Testing Procedure -- 3.3 Solution Quality and Exemplary Results -- 4 Generation of Parking Procedures Based on Spot State Data -- 4.1 Analysis of Historical Spot State Data -- 4.2 Generation of Random Parking Procedures -- 5 Fusion of Parking Occupancy and Parking Time Data -- 5.1 Problem Analysis and Conceptual Model -- 5.2 Formulation of an Optimization Model -- 5.3 Solving the Optimization Problem -- 5.4 Optimization Results -- 6 Conclusions and Outlook -- References -- Road Traffic Safety Assessment-Strategies, Programs, and Solutions -- The Use of Simulation Tools to Minimize the Risk of Dangerous Events on the Airport Apron -- 1 Introduction -- 2 The Decision Model Minimizing the Risk of Hazardous Events -- 2.1 The Main Assumptions -- 2.2 Data Input and Decision Variables -- 2.3 Limits and the Criterion Function -- 3 The Ant Algorithm -- 3.1 The Main Assumptions -- 3.2 The Steps of Algorithm -- 4 Case Study -- 4.1 Data Input -- 4.2 Determining the Theoretical Distribution of Occupancy of Sections and Nodes -- 4.3 The Results -- 5 Conclusions -- References -- Numerical Investigation on the Piston Effect in Subway Tunnels -- 1 Introduction -- 2 Numerical Model -- 3 Results -- 4 Conclusions -- References -- Problems of Studies on Emotions in Road Traffic -- 1 Introduction -- 2 Malleable Types of Anxiety in Road Traffic -- 3 Limits of Interpretation -- 4 Measurement Methodology -- 5 Research Hypotheses -- 6 Potential Measurement Data -- 7 Conclusions -- References -- Author Index.

Sommario/riassunto

This book presents many valuable tips for making decisions related to traffic flow in transport networks. The knowledge base in practical examples, as well as the decision support systems described in this book, finds interest among people who face the daily challenge of searching for advanced solutions and practical applications in road traffic engineering. The publication is therefore addressed to local authorities related to the planning and development of development strategies for selected areas with regard to transport (both in the urban and regional dimension) and to representatives of business and industry, as people directly involved in the implementation of traffic engineering solutions. The publication contains selected papers submitted to and presented at the 18th “Transport Systems. Theory and Practice” Scientific and Technical Conference organized by the Department of Transport Systems, Traffic Engineering and Logistics at the Faculty of Transport and Aviation Engineering at the Silesian University of Technology. The conference took place on September 19-20, 2022, in Katowice (Poland).