

Contents

Opening Speech at the University	V
Opening Speech in the Town Hall	VII
Preface	IX
Contents	XI
List of Participants	XV
Pedestrian Dynamics	
A Speed-Concentration Relation for Bi-Directional Crowd Movements with Strong Interaction	3
<i>S.A.H. AlGadhi, H.S. Mahmassani, and R. Herman</i>	
Simulation of Pedestrian Crowds in Normal and Evacuation Situations	21
<i>D. Helbing, I.J. Farkas, P. Molnár, and T. Vicsek</i>	
Modelling Pedestrians in Transfer Stations	59
<i>W. Daamen, P.H.L. Bovy, and S.P. Hoogendoorn</i>	
Cellular Automaton Approach to Pedestrian Dynamics – Theory	75
<i>A. Schadschneider</i>	
Cellular Automaton Approach to Pedestrian Dynamics – Applications	87
<i>C. Burstedde, A. Kirchner, K. Klauck, A. Schadschneider, and J. Zittartz</i>	
Space Syntax Based Agent Simulation	99
<i>A. Penn and A. Turner</i>	
Flow Capacities from Cellular Automata Modeling of Proportional Splits of Pedestrians by Direction	115
<i>V.J. Blue and J.L. Adler</i>	
Microscopic Pedestrian Wayfinding and Dynamics Modelling	123
<i>S.P. Hoogendoorn, P.H.L. Bovy, and W. Daamen</i>	
2-Dimensional Optimal Velocity Models for Granular Flow and Pedestrian Dynamics	155
<i>Y. Sugiyama, A. Nakayama, and K. Hasebe</i>	

Multi-Modal Traffic in TRANSIMS 161

K. Nagel

A Multi-Agent Cellular Automata Model of Pedestrian Movement 173

J. Dijkstra, J. Jessurun, and H. Timmermans

Laying the Foundations: The Use of Video Footage to Explore

Pedestrian Dynamics in PEDFLOW 181

A. Willis, R. Kukla, J. Kerridge, and J. Hine

Problems of Human Attention Decrease Detection 187

T. Tichý

Microscopic Simulation of Pedestrian Crowd Motion 193

A. Keßel, H. Klüpfel, J. Wahle, and M. Schreckenberg

Evacuation Simulation

Simulating Evacuation and Circulation in Planes, Trains, Buildings

and Ships Using the EXODUS Software 203

E.R. Galea

Mathematical Modelling of Evacuation Problems: A State of the Art 227

H.W. Hamacher and S.A. Tjandra

Earliest Arrival Flow Model with Time Dependent Capacity

for Solving Evacuation Problems 267

H.W. Hamacher and S.A. Tjandra

Life Saving Applications of Directional Sound 277

D. Withington

Assessment and Analysis of Evacuation Processes on Passenger

Ships by Microscopic Simulation 297

T. Meyer-König, H. Klüpfel, and M. Schreckenberg

Simulating Evacuation Processes with ASERI 303

V. Schneider and R. Könnecke

Models and Algorithms for Evacuation Analysis in Urban

Road Transportation Systems 315

F. Russo and A. Vitetta

Detection of Pollutant Sources in an Indoor Environmental

Monitoring System 323

S. Bandini, G. Frisoni, and S. Manzoni

Contents XIII

The Precautions in Istanbul in Case of a Possible Earthquake 331

R. Bozdogan and H.I. Polat

Ship Evacuation

An Overview of Present and Under-Development IMO's Requirements

Concerning Evacuation from Ships 339

M. Doglani

EVAC and LBL

The Mustering and Evacuation Computer Models Resulting

from the BriteEuram Project MEPdesign 355

K.H. Drager, H. Soma, and S. Orset

A Mesoscopic Model for Passenger Evacuation in a Virtual Ship-Sea

Environment and Performance-Based Evaluation 369

D. Vassalos, H. Kim, G. Christiansen, and J. Majumder

The U.S. Coast Guard Approach to Evacuation Analysis 393

K.C. Kiefer

Modelling and Simulation of Ship Motions and Vessel Traffic Services

in Relation to Safe Navigation in Narrow Waterways 409

A.N. Ince

Optimisation of the Evacuation Plan of an Offshore Vessel 431

M. Flier

Influence of Ship Listing and Ship Motion on Walking Speed 437

W. Bles, S. Nooy, and L.C. Boer