Contents

Models and Technical Innovations

SUMO’s Road Intersection Model ................................. 3
Jakob Erdmann and Daniel Krajzewicz

Basic Driving Dynamics of Cyclists ............................ 18
Erik Andresen, Mohcine Chraibi, Armin Seyfried, and Felix Huber

Implementation of an Energy Model and a Charging Infrastructure in SUMO ........................................... 33
Tamás Kurczveil, Pablo Álvarez López, and Eckehard Schnieder

Agent-Based Traffic Simulation Using SUMO and JADE: An Integrated Platform for Artificial Transportation Systems .................................................. 44
Guilherme Soares, Zafeiris Kokkinogenis, José Luiz Macedo, and Rosaldo J.F. Rossetti

Sumo as a Service – Building up a Web Service to Interact with SUMO ........................................... 62
Mario Krumnow

SUMOPy: An Advanced Simulation Suite for SUMO .............. 71
Joerg Schweizer

3D Visualization for Microscopic Traffic Data Sources .............. 83
Matthew Fullerton, Andreas Wenger, Mathias Baur, Florian Schimandl, Jonas Lüssmann, and Silja Hoffmann

Applications and Surveys

Driver Attitude and Its Influence on the Energy Waste of Electric Buses ........................................... 99
Deborah Perrotta, José Luiz Macedo, Rosaldo J.F. Rossetti, João Luiz Afonso, Zafeiris Kokkinogenis, and Bernardo Ribeiro

Hybrid Location Management in Vehicular City Environments ........................................... 109
Aisling O’Driscoll and Dirk Pesch

Real-Time Simulations Based on Live Detector Data – Experiences of Using SUMO in a Traffic Management System ........................................... 136
Mario Krumnow and Andreas Kretschmer

Real-Time Traffic Conditions with SUMO for ITS Austria West ........................................... 146
Karl-Heinz Kastner, Robert Keber, Petru Pau, and Martin Samal
SUMO in Scientific Literature, 2002–2012. .................................................. 160
   Daniel Krajzewicz

Author Index ................................................................. 175