

# Curriculum Vitae

## Prof. Dr.-Ing. Oliver Michler



### **Educational Qualifications**

- PhD (Doctor)            Doctor of Electrical Engineering, Information Technology and Automation
- Diplom (Master)        Diplom-Ingenieur in Electrical Engineering, Information Technology and Automation

### **Scientific and Professional Positions (since 1993)**

- 1993 - 1997            Scientific Staff and PhD-Research of TU Dresden, Faculty of Electrical and Computer Engineering; Doctoral research in the field of in the field of sensitivity and robustness analysis of linear systems
- 1997 – 2000            Scientific Project manager at Video-Audio-Design GmbH as a Telekom-Partner; Fields of work: Basic research on digital audio, video and data broadcasting, sensor technology with mobile data acquisition with data fusion in mobile vehicle operation
- 2000 – 2005            Scientific Staff at Fraunhofer Institute for Transportation and Infrastructure Systems Dresden; Department of Intermodal Traffic Information and Management Systems / Mobility Systems
- 2005 – 2008            Professor at University of Applied Sciences Dresden in Signal Processing and Electronic Measurement Techniques; Teaching and research areas: Signal processing, message transmission and Electronic Measurement
- 2008 –                    Full Professor at TU Dresden in Systems Information Technology, Faculty of Transportation and Traffic Sciences, Institute of Traffic Telematics
- 2010 – 2017            Establishment and management of a TU research group at the Fraunhofer Institute for Transportation and Infrastructure Systems, Department of Positioning, Information and Communication (OIK) with topics from applied research on localisation procedures, energy efficiency of sensors and bandwidth-optimised data transmission.
- 2019 -                    Director of TU Dresden of Institute of Traffic Telematics

### **Scientific Advisory Board member**

Companies (i.e. MRK Group, Metirionic)

International Organizations (i.e. Shift2Rail, DGON, SiliconSaxony)

International Conferences (i.e. MT-ITS, WPNC, ENC, IPIN, SPACOMM/IARIA)

## **Contents of research - Informational Aspects of Transportation Processes**

- New Mobility Systems and Mobility Concepts for different modes of traffic using digital interconnection, especially of traffic and service information using Broadcast-, Mobile Cellular- and Adhoc-Networks
- Vehicle independent location in road-, rail-, aeronautic- and maritime environments with an accuracy within cm-range, up to wireless sensing functionalities
- Safety and Reliability of autonomous and digital connected Mobility Systems and Vehicles
- Automated Test of Communication-, Localization- and Driver Assistance Systems based on generated and highly dynamic Vehicle Environmental Signals

## List of publications (English, peer reviewed, selection of the last 4 years)

### 2018

- Ußler, H.; Hanke, U.; Michler, O.; Löffler, G.: *Validierung multipler Sensorsysteme als Basis einer Telematikplattform für Intelligente Güterwagen*. 26. Verkehrswissenschaftliche Tage, Dresden, Deutschland, 2018, Konferenzband der VWT S. 641 – 656.
- Ußler, H.; Michler, O.; Löffler, G.: *Validation of multiple sensor systems based on a telematics platform for intelligent freight wagons*. Proceedings of the 21st EURO Working Group on Transportation Meeting, EWGT 2018, 17th-19th September 2018, Braunschweig, Germany; Transportation Research Procedia Volume 37, 2019, pp. 187-194.
- Schwarzbach, P.; Reichelt, B.; Michler, O.; Richter, P.; Trautmann, T.: *Cooperative Positioning for Urban Environments based on GNSS and IEEE 802.11p*. 15th Workshop on Positioning, Navigation and Communications (WPNC), Bremen, Germany, 2018.

### 2019

- Khalaf-Allah, M.; Michler, O.: *Utilization of Nuisance Parameter to Increase Positioning Accuracy*. European Navigation Conference (ENC), Warsaw, Poland, 2019.
- Pinzel, F.; Holfeld, J.; Olunczek, A.; Balzer, P.; Michler, O.: *V2V- and V2X-Communication data within a distributed computing platform for adaptive radio channel modelling*. Proceedings of the 6th International Conference on Models and Technologies for Intelligent Transportation Systems (MT-ITS), Cracow, Poland, 2019.
- Michler, A.; Schwarzbach, P.; Michler, O.; Sommer, M.; Bachurina, D.; Trinckauf, J.: *Decentralized vehicle-mounted Safety Logic for Secondary Railway Lines based on GNSS Positioning and Integrity Monitoring*. Proceedings of the 6th International Conference on Models and Technologies for Intelligent Transportation Systems (MT-ITS), Cracow, Poland, 2019.
- Schwarzbach, P.; Michler, O.: *Simulative Validation of Snapshot Likelihood based GNSS Probability Grid Positioning for Precise Vehicle Localization*. 2019 IEEE Intelligent Transportation Systems Conference (ITSC), Auckland, New Zealand, 2019, pp. 3302-3307.
- Schwarzbach, P.; Michler, A.; Tauscher, P.; Michler, O.: *An Empirical Study on V2X Enhanced Low-Cost GNSS Cooperative Positioning in Urban Environments*. *Sensors* 2019, 19, 5201.

### 2020

- Schwarzbach, P.; Michler, A.; Michler, O.: *"Tight Integration of GNSS and WSN Ranging based on Spatial Map Data Enhancing Localization in Urban Environments"*. 2020 International Conference on Localization and GNSS (ICL-GNSS), Tampere, Finland, 2020, pp. 1-6.

- Jung, A.; Schwarzbach, P.; Michler, O.: „*Future Parking Applications: Wireless Sensor Network Positioning for Highly Automated In-House Parking*”. In Proceedings of the 17th International Conference on Informatics in Control, Automation and Robotics - Volume 1: ICINCO, pages 710-717.
- Michler, O.; Schwarzbach, P.; Richter, R.: „*Engineering Education over the Course of Time: A Technical and Didactic Journey over Four Decades: From Manual Road Map Navigation to Electronic Navigation Systems to Autonomous Cars*”. Part of the Advances in Intelligent Systems and Computing book series (AISC, volume 1134).
- Michler, A.; Schwarzbach, P.; Ußler, H.; Tauscher, P.; Michler, O.: *A V2X Based Data Dissemination Scheme for 3D Map Aided GNSS Positioning in Urban Environments*; A V2X Based Data Dissemination Scheme for 3D Map Aided GNSS Positioning in Urban Environments
- Khalaf-Allah, M.; Michler, O.: *Average Linear Least Squares Positioning: Preliminary Results*; in Proc. International Radar Symposium (IRS-2020), Oct. 5-7, 2020, Warsaw, Poland.
- Ninnemann, J.; Schwarzbach, P.; Jung, A.; Michler, O.: *Device-Free Passive Localization based on Narrowband Channel Impulse Responses* in Proc. International Radar Symposium (IRS-2020), Oct. 5-7, 2020, Warsaw, Poland.
- Khalaf-Allah, M.; Michler, O.: *Ranging Based Wireless Positioning with Accurate Estimation of Bias Errors*; in Proc. European Navigation Conference (ENC 2020), Nov. 23-24, 2020, Dresden, Germany.
- Schwarzbach, P.; Michler, O.: *GNSS Probabilistic Single Differencing For Non-Parametric State Estimation Based On Spatial Map Data*; in Proc. European Navigation Conference (ENC 2020), Nov. 23-24, 2020, Dresden, Germany.
- SCHWARZBACH, P.; MICHLER, A.; ENGELBRECHT, J.; SCHULTZ, M.; MICHLER, O.: *Evaluation of Technology-Supported Distance Measuring to Ensure Safe Aircraft Boarding during COVID-19 Pandemic*; Sustainability 2020, 12(20), 8724

## 2021

- Ninnemann, J.; Schwarzbach, P.; Jung, A.; Michler, O.: *Lab-Based Evaluation of Device-Free Passive Localization Using Multipath Channel Information*; Sensors 2021, 21, 2383
- SCHWARZBACH, P.; WEBER, R.; MICHLER, O.: *Statistical Evaluation and Synthetic Generation of Ultra-Wideband Distance Measurements for Indoor Positioning Systems*; IEEE Sensors; 2021
- Ußler, H.; Setzefand, C.; Kanis, D.; Schwarzbach, P.; Michler, O.: *Efficient coverage planning for full-area C-ITS communications based on radio propagation simulation and measurement tools*; in Proc. 27th ITS World Congress, 11-15 October 2021, Hamburg, Germany
- Ninnemann, J.; Schwarzbach, P.; Michler, O.: *Multipath-assisted Radio Sensing and Occupancy Detection for Smart In-house Parking in ITS*; The 2021 International Conference on Indoor Positioning and Indoor Navigation (IPIN 2021), November 29-December 2; 2021, lloret de Mar; Spain,

