EMC SOCIETY German Chapter

IEEE

# EMC Professional Talk


**Dr. Jan Hansen**

Assistant Professor

**Graz University of Technology & Silicon**

**Austria Labs, Graz, Austria**


## Using Machine-Learned Models for EMC Optimization of Power Electronic Devices


With increasing sophistication of power electronics design, rigid optimization becomes important. In EMC, numerical modeling still suffers, in case of complex models and high frequencies, from long computation times and lack of model accuracy, which prevent the desirable solution of multi-objective optimization problems. Surrogate models may help to overcome these problems. This presentation shows several examples of successfully trained surrogate models, indicating that machine learning enables to evaluate complex, parameterized EMC models in millions of runs within a single day.


## 14.12.2023, 5:00 p.m. (UTC+1)

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| **Zoom:** | https://ovgu.zoom.us/j/65212681357?pwd=T085Q3k5MUtUL01yaDhXNXkybkIzUT09 |
| **Meeting-ID:** | **652 1268 1357** |
| **passcode:** | **751648** |

**About the speaker:**

Jan Hansen received the B.Sc. degree in mathematics/physics from Trent University, Peterborough, ON, Canada, in 1995, the Diploma in physics from Freiburg University, Freiburg in Breisgau, Germany, in 1998, and the Ph.D. degree in wireless communications from ETH Zurich, Zurich, Switzerland, in 2003. After completing the Ph.D. degree, he was with the Information Systems Laboratory, Stanford University, Stanford, CA, USA, working in digital communication theory, channel modeling, and wave propagation. He then joined Robert Bosch GmbH, Stuttgart, Germany, to work in electromagnetic compatibility (EMC) simulation, eventually serving as head of the simulation team in Bosch's Automotive Electronics' EMC Department. Since 2022, he is Assistant Professor with the Institute of Electronics at Graz University of Technology and Staff Scientist at Silicon Austria Labs. His primary research interests include the development of EMC simulation methods, electromagnetic modeling, and the application of machine-learning techniques.

**Organization:**

Dr.-Ing. Miroslav Kotzev, Rohde & Schwarz GmbH & Co. KG
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