

## Invitation to a Technical Teleconference

**Prof. Dr.-Ing. David Pommerenke**

**Institute of Electronics, Graz University of Technology**



### **“Near field EM measurement techniques: Abilities and limits”**

Near field scanning is used to visualize fields above an IC or PCB. However, the actual challenge lies in using the data. It may be as simple as comparison A to B but also may involve complex source reconstruction or far field prediction. The talk will explain and give examples. It will discuss probing, resolution, cross field coupling in probes and explain when the cabling of probes matters, and when not. Further, the noise temperature of probes will be used to guide in optimization of the sensitivity.

But represents the near field the information we want?

Another related method, emission source microscopy, only visualize the radiating sections on the PCB, but at a price: The resolution is limited. The method will be explained and contrasted to near field scanning.

Having a local probe above a PCB can also be used for susceptibility analysis, like determining the local response to an ESD like pulse coupled via the field. This leads to a system level ESD design and debugging tool for soft-failures. The talk will explain the methodology and its limits.

Once an ESD strikes a system, e.g., at an USB port the current will spread throughout the system. This current spread can be visualized with picosecond resolution to show expected and surprising current paths via ESD current spread measurements

Other analysis methods, that are based on local probing show the structural resonance of a PCB or module by measuring the frequency dependent Q-factor of structures at different locations.

**12.01.2021, 16:00 Uhr**

**Zoom: <https://ovgu.zoom.us/j/92003900283>**

**Meeting-ID: 920 0390 0283 Passwort: 008922**

The slides will be provided on demand after the meeting:

<http://sites.ieee.org/germany-emc/contact-us/>



**IEEE German  
EMC Chapter**



**Informations about the speaker:**

David Pommerenke received his PhD at the Technical University in Berlin. He joint HP in Roseville CA for 5 years performing EMC research and then joint the EMC laboratory of the Missouri University of S&T in Rolla, MO. Here he was associated chair. In 2020 he moved to Graz University of Technology, the EMC laboratory at the Institute of Electronics. His research interest is ESD, EMC and instrumentation and measurements he has published more than 150 journal papers related to these topics.

**Organisation:**

Dr.-Ing. Miroslav Kotzev, Rosenberger Hochfrequenztechnik GmbH  
IEEE German EMC Chapter - Coordinator Technical Teleconferences