



Elektrotechnisches Kolloquium

der Bergischen Universität Wuppertal

Die Fakultät für Elektrotechnik, Informationstechnik und Medientechnik lädt zur Teilnahme an folgender Vortragsveranstaltung mit anschließender Diskussion ein:

Es spricht Thomas Bücher

Lehrstuhl für Hochfrequenzsysteme in der Kommunikationstechnik

Prof. Dr. nat. Ullrich Pfeiffer

über das Thema

Towards Communication Systems operating above 270 GHz

Inhalt:

Every ten years, a new generation of mobile system standards for wireless communications is introduced. With the current generation (5G) being deployed since 2019, research is now focusing on the following Beyond5G or 6G standard. While mmWave frequencies have already been used in 5G operating around 28 and 39 GHz, it is to be expected that operating frequencies will increase above 100 GHz, with 270 GHz already being defined in the IEEE standard 802.15.3d-2017.

For successful introduction of new communication standards, silicon-based circuits and systems are needed. Silicon-based transistors such as CMOS or SiGe BiCMOS HBTs allow for cost-efficient, high yield systems that can be mass-produced to meet the demands of a growing consumer market. At the same time, modern day communication requires high absolute bandwidths to achieve increasing data rates more than 100 Gbit/s. For comparison, the highest data rate envisioned for 5G is 20 Gbit/s.

In the presentation, multiple aspects of broadband communication systems will be discussed spanning different frequency domains from RF to baseband as well as different integration levels from PCB design to integrated BiCMOS RF frontends. The current state of RF frontends will be shown while future challenges for packaging and baseband processing will be highlighted.

Termin:

14.06.2023, 14 Uhr

Ort:

Bergische Universität Wuppertal
Campus Freudenberg, Seminarraum FG 1.01