Scientific Workshop SW03

Antennas and Propagation Aspects for THz Communications

Abstract:

THz Communications operating at 300 GHz and beyond is seen as one of the candidates for 6G wireless systems. This high frequency band with its high path loss and the small size of objects impacting the radio channel contains many challenges in terms of radio channel characterisation and antenna development. Numerous research projects on various aspects on THz communications are currently ongoing. This workshop – jointly organized by the projects H2020 EU-Japan ThoR (www.thor-project.eu), H2020 Terapod (www.tereapod-project.eu) and DFG FOR 2862 Meteracom (www.meteracom.de) - will specifically discuss aspects on antennas and propagation of THz communications presenting recent results from these three projects.

Workshop Program (Friday 26 March 2021, 9h-12.40)

9.00  Welcome and Workshop Opening
      Thomas Kürner, Technische Universität Braunschweig, Germany

9.05  Introduction to DFG FOR 2863 Meteracom
      Thomas Kürner, Technische Universität Braunschweig, Germany

9.15  Development of calibration techniques and traceability of the measured variables in THz wireless channel
      Mohanad Al-Dabbagh, Physikalisch-Technische Bundesanstalt, Germany

9.35  Terahertz time-domain spectroscopy characterization of atmospheric propagation and building materials
      Enrique Castro Camus, Philips-Universität Marburg, Germany

9.55  Introduction to H2020 Terapod
      Alan Davy, Waterford Institute of Technology, Ireland

10.05 Substrate integrated 1x4 Antenna Array at 300 GHz using BCB layers
      Luis Pessoa. INESC TEC, Portugal

10.25 Physical Layer Simulation of THz-Communication Systems in the Context of Data-Center Applications
      Christoph Herold, Technische Universität Braunschweig, Germany

10.45 Break

11.00 Submillimeter-wave Agile Antenna Systems (Invited Talk)
      Ronan Sauleau, Université de Rennes 1, France

11.30 Introduction to H2020 EU-Japan ThoR
      Tetsuya Kawanishi, Waseda University, Japan

11.40 Near-field measurement and far-field characterization of J-band antennas in the ThoR project
      Shintaro Hisatake, Gifu University, Japan

12.00 300 GHz transmission of E/V bands data-flows in the ThoR project
      Guillaume Ducournau, Université de Lille, France

12.20 Panel Discussion – THz Communications – what is required to become reality?
      Panelists: Bruce Napier (Vivid Components, Chair), Ronan Sauleau, Thomas Kürner, Alan Davy, Tetsuya Kawanishi