

IEEE Waveform Generation Measurement and Analysis Technical Committee (TC10)
Meeting Agenda
16 April 2024 / 11:00 AM – 1:00 PM (UTC-5)

1. Call to Order
2. Introductions and Roll Call
3. Approval of the Agenda
4. Approval of the minutes from the previous meeting (16 January 2024)
5. TC10 business
 - a. eTools – questions, comments, concerns
 - b. IEEE TC10 history
 - c. Quarterly meetings – notifications, invitations
 - i. Upcoming: 16 July 2024
 - d. I2MTC Special Session - Waveform acquisition and analysis (Organized by TC-10)
 - e. New standards
 - f. Other business
6. Working Groups Updates
 - a. IEEE Std 181, IEEE Standard for Transitions, Pulses, and Related Waveforms
 - i. Revision of IEEE Std 181
 1. Lead: Nick Paulter
 2. Status:
 - ii. Seeking new working group chair
 - b. IEEE Std 1696, IEEE Std for Terminology and Test Methods for Circuit Probes
 - i. Revision of IEEE Std 1696
 1. Lead: John Jendzurski
 2. Status:
7. Guest presentation
 - a. Fritz Caspers (see next page)
8. Adjourn

Information on guest presentation**History and development of bench measurement techniques for impedance evaluation****Fritz Caspers****CERN**

Abstract: After the introduction of the beam coupling impedance concept by V. Vaccaro it was realized soon that for highly relativistic beams a very close similarity exists between the TEM like field of the charged particles and the field of a wire in a coaxial structure. This is the basis and motivation of the coaxial wire method. Early concepts of this method are shown including their shortcomings which had lead over a certain period to a poor reputation of the coax wire method since not all sources of errors and misinterpretation had been understood properly. Transverse impedance measurements using two wires carrying currents with opposite polarity were already done on the late 70ths and the concept was extended to the evaluation of dipole and quadrupolar impedances by applying a single displaced wire and pair of wires. Advanced and special methods are shown and briefly discussed together with few examples.

Presenter biography: Fritz Caspers was born in Bonn, Germany, in 1950. He studied electrical engineering at the RWTH (Technical University) Aachen (Germany) between 1969 and 1975. Afterwards he became scientific assistant at the "Institut für Hoch- und Höchsthfrequenztechnik" at the Ruhr-Universität Bochum (Germany) until spring 1982. He worked in the field of optical fiber technology as well as microwave measurements and received his PhD there (with honors) in 1982. He joined CERN as a "CERN fellow" then, contributing to cavity perturbation measurements and beam coupling impedance evaluation. In 1984 he became member of the antiproton accumulator group and got involved in the development of stochastic cooling systems for antiproton beams and also had overall operational responsibility for this part of CERN. He has given many lectures in the CERN accelerator school and other schools (JUAS) on RF-, microwave and beam-diagnostic related subjects since about 1990 and served in numerous review committees (CERN, Japan, China Germany and USA) over several decades. He had authored or co-authored about 470 papers (available via CDS CERN) and about 30 patents or patent applications. Scientific activities include beam stability issues, stochastic beam cooling, RF measurement techniques, EMIC/EMC responsibilities and microwave based axion/dark matter search (CAST CAPP MADMAX). His present status (2023) is CERN-user (home institute ESI in France) in the experimental physics department. He was elevated life Fellow of the IEEE in Jan. 2019. Scientific journal reviews include PRD, PRL, IEEE-IM, IEEE-ED, NIMA and many others. Since beginning of 2021 he his member of the IEC commission on electromagnetic compatibility EC/TC106/JMT62209-3) as well as the IEEE committee on pulsed power (TC-10). Presently serving as a MAC member (machine advisory committee) for Dubna (Nica) and IMP (HIAF) and made contributions (consulting) to a working group in Vienna (Atom-institute) for measurements of single electron signals from radioactive sources and also collaboration with SMI (Stephan Meyer Institute, Vienna) for RF spin flip structures. At CERN, site wide consulting for EMI/EMC continues and also stochastic cooling, beam coupling impedance issues, and beam diagnostic related consulting is part of the daily work both in practical training and theoretical discussions. In 2021 He was awared the Dieter Möhl medal and also the PIFI (Chinese academy of science) fellowship Kat A.