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PHOTONIK SEMINAR

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THz Wireless Communications: A Photonics Approach

To accommodate the rapid increase in global wireless traffic, which will reach to 49 exabytes per month by 2021, wireless networks operating beyond 95 GHz will be required. The operation and characteristics of such networks are quite different from those of conventional wireless systems, or even of 5G systems which will employ millimeter-wave links at lower frequencies. The distinctions arise from the much shorter wavelength, which implies both a significantly higher directionality and a very different propagation and diffraction characteristic.
This offers both challenges and opportunities for future networks operating at these frequencies. In this presentation, we discuss several new measurements to characterize aspects of these high-frequency channels, as well as some photonics-inspired devices for manipulation of terahertz signals. A first study of the implications of high directionality on eavesdropping and physical-layer security will also be described.

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Seminarraum Institut für Photonik
Gußhausstraße 27-29, 1040 Wien, Raum CBEG02

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