Real-field Performance Multiple-beam Beam-former with Polarization Compensation

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Abstract:

Double-directional, ultra wideband dual-polarized channel measurements at 70 GHz have been carried out in a small-office environment and in an entrance hall scenario at the TU Ilmenau. Different positions and visibility conditions of Tx and Rx have been measured using horn antennas, sweeping the angular domain at both ends. The measured data has been processed to emulate a communication system with analog beam-forming capabilities. Different single datastream polarimetric singel-beam and multiple-beam beam-forming strategies have been adopted and analysed with the measured data, showing an improvement in performance achieved by adopting such an architecture.