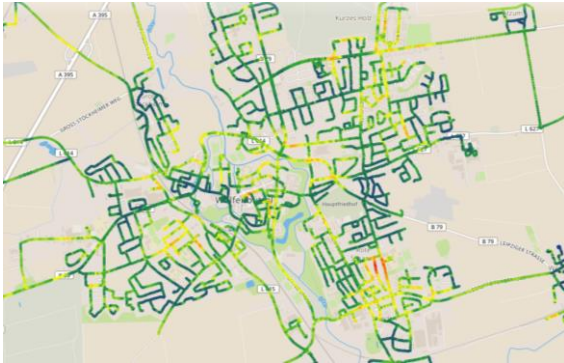
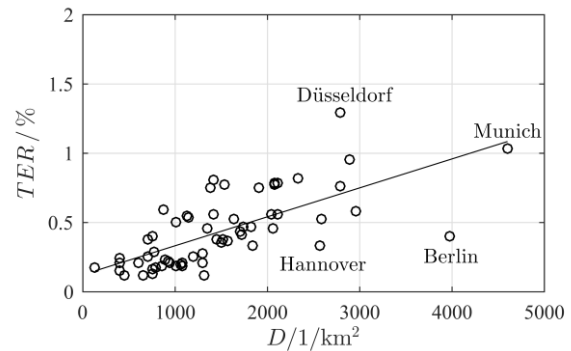


Forschungsbericht



Field strength map for Wolfenbüttel, www.Feldkarte.de



Good correlation of measurement results and population density

Breitbandige Feldstärkekarte zur Expositionsbewertung

In this work a broadband electromagnetic field map has been obtained covering 63 German cities. This radio map has been obtained using a mobile measurement system equipped with modern TDEMI receivers. Spectrum data as well as field map has been analyzed in detail. Furthermore, in order to allow for an assessment of exposition to non-ionizing electromagnetic fields, extensive measurement data at any location has been reduced to the so called total exposition ratio or total exposure ratio TER. All results can be called up freely at www.Feldkarte.de.

Our results basically indicate that base stations for mobile communication are the main source of electromagnetic fields. Here, results for all German cities comply with electrical field strength limit. Results of all cities have finally been compared using an average TER. Relatively good correlation of measurement results and population density has been noticed. Even though correlation is high distinct differences have been noted for larger cities as Berlin, Munich or Hannover.

Broadband Environment Mapping for Exposition Assessment

Benefits and difficulties of the introduced measurement as well as evaluation procedure have been assessed. In future work frequency range will be extended to lower frequencies. Besides exposition assessment results can hopefully be used to allow for reliable fingerprinting as well as location estimation. Presented field strength map may then be utilized by autonomous vehicles or other upcoming applications.

Kontaktdaten

Ostfalia Hochschule für angewandte Wissenschaften
Fakultät Elektrotechnik
Ansprechpartner: Prof. Dr. Matthias Hampe
Salzdahlumer Straße 46/48
38302 Wolfenbüttel
Telefon: +49 (0)5331 939 42680
E-Mail: m.hampe@ostfalia.de
Internet: www.ostfalia.de