**Teaching and Research Area
Information Theory and
Systematic Design of
Communication Systems**

ISEK

**RWTHAACHEN
UNIVERSITY**

Indoor Channel Modeling
Parameterizing an Indoor Channel Model and Evaluating Channel Model Measurements

Research Area

Indoor channel modeling, parameterization, statistical methods

Description

As indoor traffic increases, various solutions to increase capacity and mitigate interference indoors are being developed. These solutions need to be effectively modeled and compared in order to evaluate which solutions are appropriate for various scenarios. This starts with modeling the indoor channel using measurement data. Indoor modeling is especially challenging due to the large amount of reflection and non-uniformity that occurs indoors. This makes deterministic models far too complex. Statistical models are more promising, and to reduce their error, real measurements can be used to appropriately parameterize the models. For this thesis measurements of the ICT cubes will be used to parameterize and evaluate a number of indoor channel models.
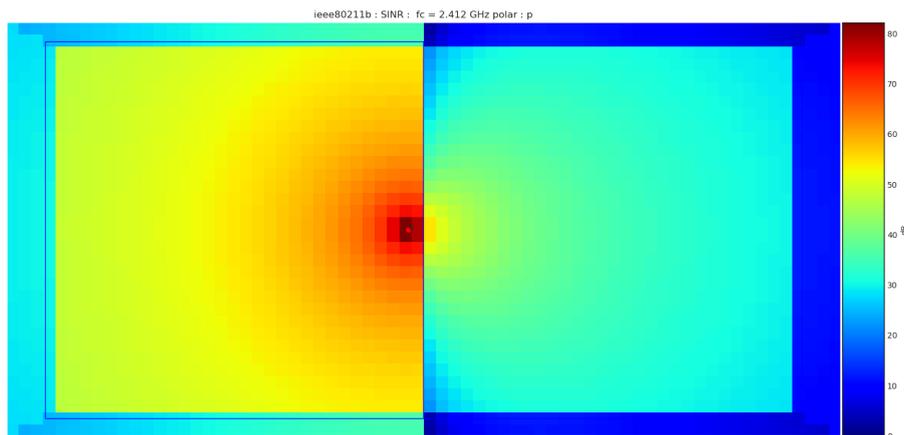

Figure 1: Indoor Channel Example

Goal

- Parameterize appropriate channel model with measurement data

- Evaluate various existing models using measurement data

Requirements

- Matlab and/or python

- Understanding of optimization preferred

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