

The Forschungszentrum Telekommunikation Wien (FTW) is a dynamic company with an international atmosphere that carries out application-oriented research in telecommunications. Our mission is to fill the gap between science and industry, pursuing a challenging research program in collaboration with both academic and industrial partners. Currently we are offering a Master thesis for the following topic:

## Improved RT Calibration and Speedup RT Calculation

Ray Tracing (RT) channel modeling is a deterministic propagation prediction tool that has been widely used to simulate indoor channel characteristics. The RT model requires an accurate three dimensional indoor database with detailed information describing the geometrical and electromagnetic properties of the environment. This information determines the accuracy of the model. Therefore, it is necessary to use a reasonable technique to calibrate the RT model parameters from measurement data. Moreover, the accuracy of RT comes at the cost of a high computational complexity, which directly scales with the number of propagation paths considered, so reducing the computational complexity is also very essential and significant.

In the course of this master thesis work the student is supposed to improve the existing RT calibration algorithms, with the goal to get more accurate RT results. Furthermore, the master student is expected to use the MATLAB Coder tool to reduce the RT calculation time on a large multicore computer.

- A self-driven and autonomous (research oriented) working style.
- Good Matlab and C programming skills.
- A solid background in propagation channel modelling, communication theory and signal processing for communications.
- Knowledge of current cellular technology is a plus.

The expected duration of the master thesis is 6 month. For master students we are able to provide a monthly financial compensation.

FTW offers researcher positions for talented scientists interested to pursuit a doctoral degree. An excellent master thesis is a strong plus for a further possible employment at FTW.

Applications should be sent to  
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