Technische Universität München
Fachgebiet Computergestützte Modellierung und Simulation

Visualization spatial distribution of corrosion probability of reinforced concrete structures

Project Characteristics			
Mathematical Modeling:	low	★☆☆☆☆	high
Programming Skills:	basic	★★★★☆	advanced
Self-Reliance:	independent	★★★☆☆	supervised

Corrosion is one of the major failure causes of reinforced concrete structures exposed to de-icing salts. In order to predict the actual and future corrosion probability of the structure or structural element models are used. Herein, no difference in the spatial distribution of probability is made within and between structural elements with the same geometry, corrosive load and material composition. Combining models with different inspection results, a visualization of the spatial distribution of corrosion probability and of its development is possible.

Therefore, different inspection results have to be related to location, implemented in model prediction and visualized, c.p. figure 1.

Goal of this Software-Lab is a program to bundle data from different sources for a stochastical analysis in the tool Strurel and to provide a visualization of the results.

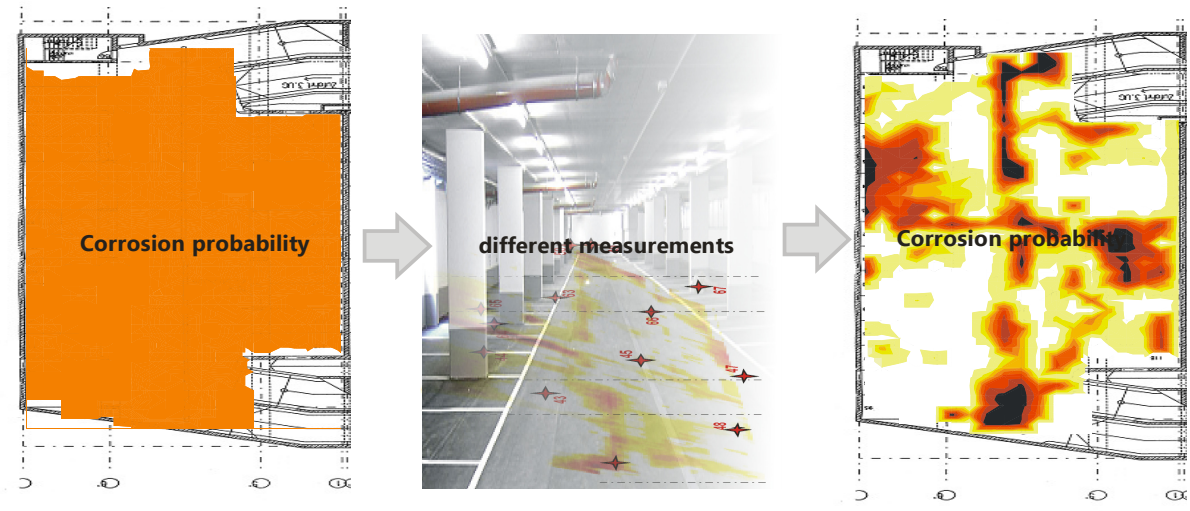

Fig 1: Work-flow for a reinforced concrete slab

Tasks:

- Getting familiar with the program Strurel.
- Writing a program to bundle data for a computation in Strurel.
- Writing a program to extract and visualize the results from Strurel

Supervisors

Katharina Lukas, Computation in Engineering, lukas@bv.tum.de
Stefanie von Greve-Dierfeld, Centre for Building Materials, greve-dierfeld@cbm.bv.tum.de